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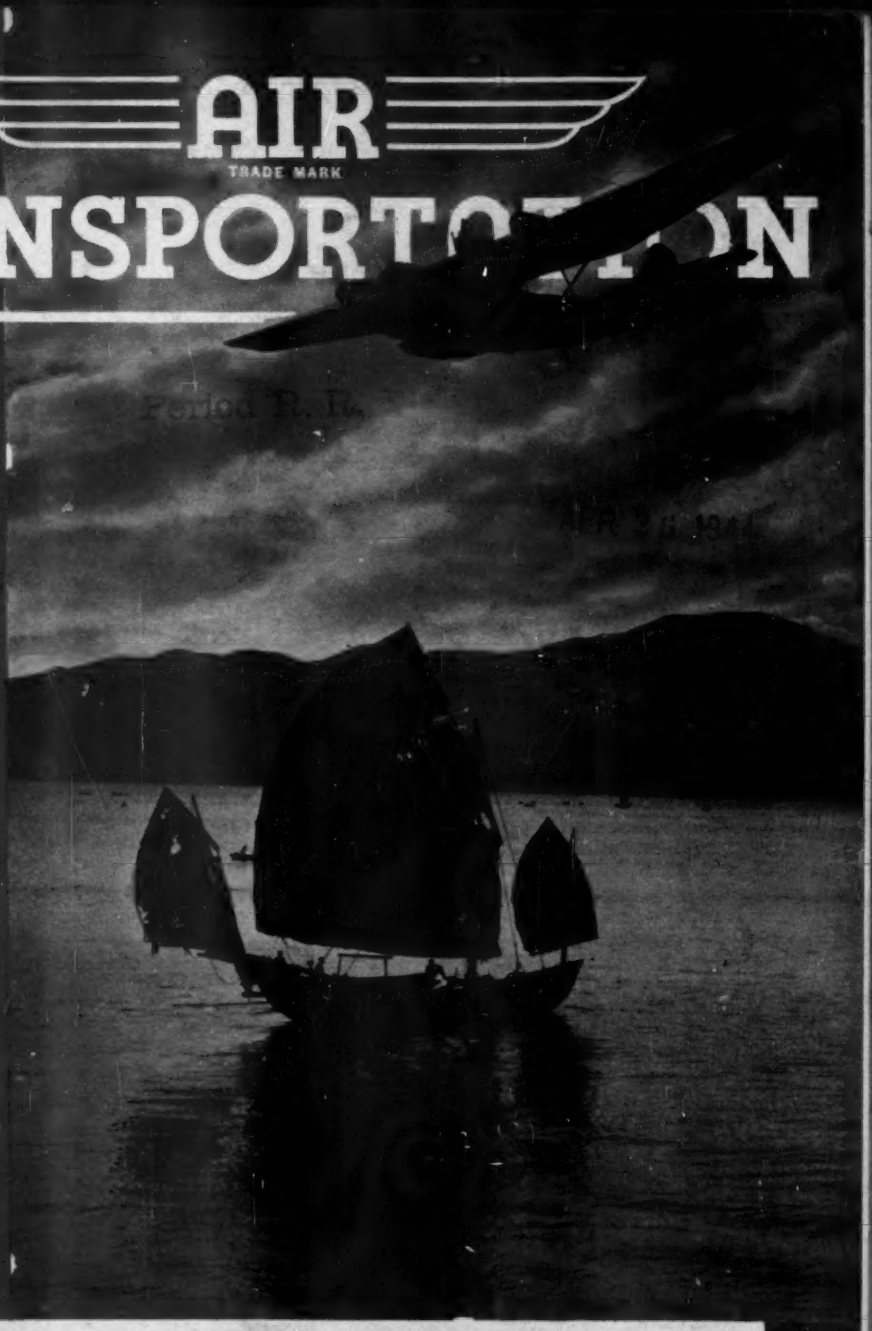

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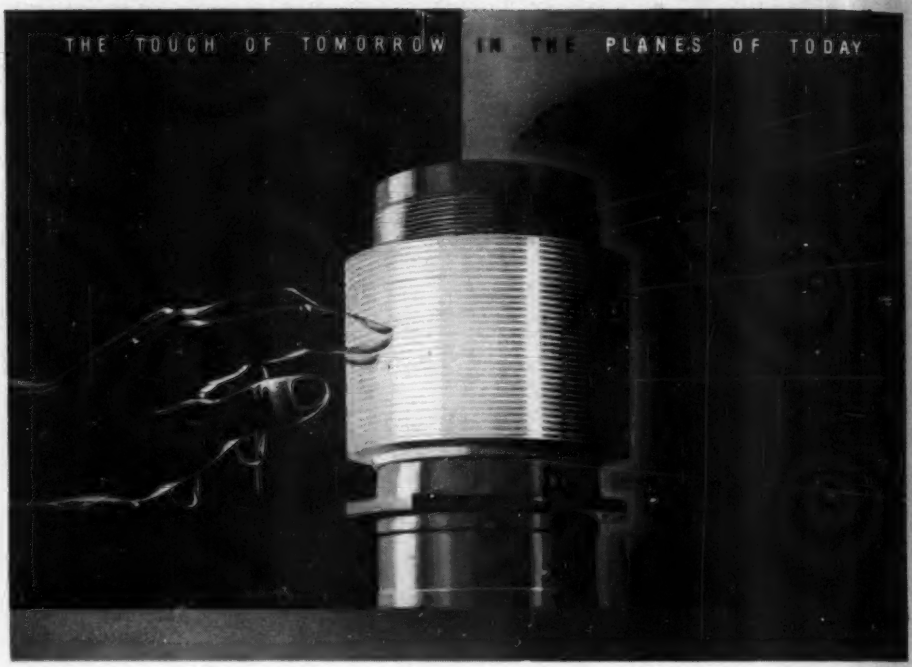

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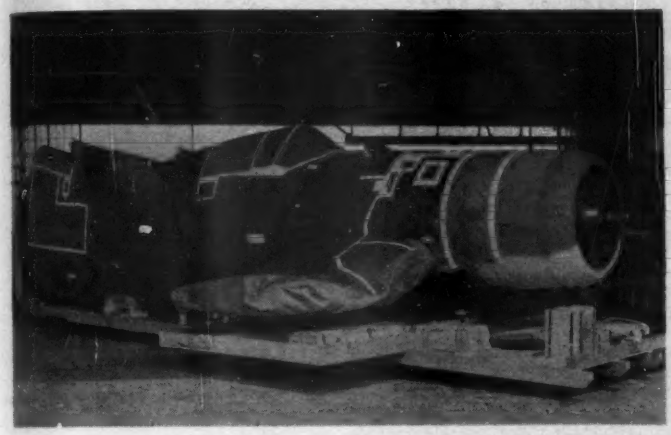

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April
1944

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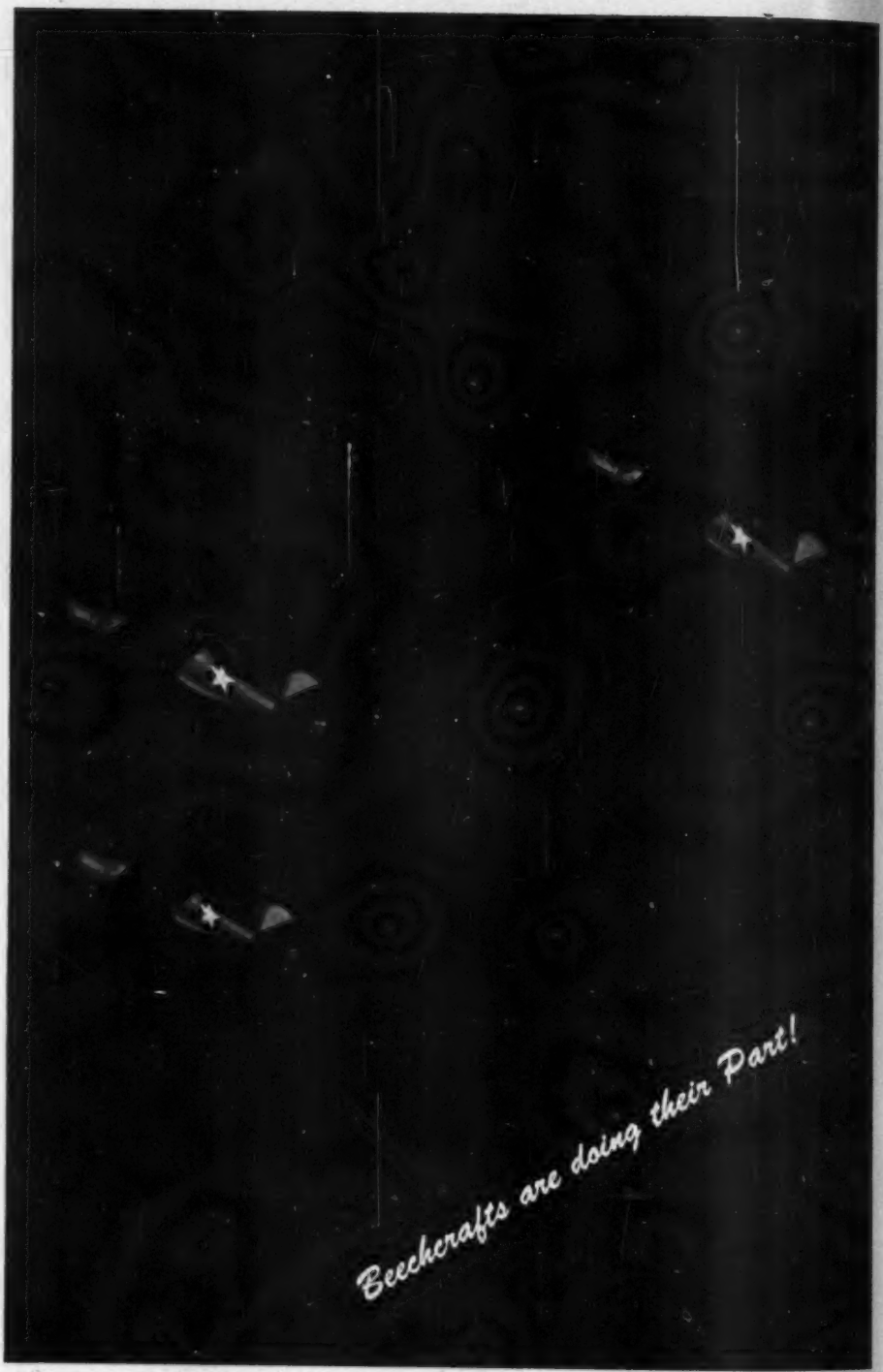
Beechcrafts are doing their Part!

The Air Cargo Outlook: Deadline Developments

MID-APRIL BROUGHT to the U. S. air cargo front at least the beginnings of decisions on many of the great issues that must be decided before the end of the war.

ON THE INTERNATIONAL FRONT, there began in London the long awaited, much discussed conference on the air future between the U. S. and Britain (AT, March). There for the U. S. were CAB's Vice Chairman Edward Warner, Assistant Secretary of State Adolph A. Berle. Lord Beaverbrook was the No. 1 British conferee. Meanwhile, in Washington, a conference with Russian representatives began.

COLUMNS OF CONJECTURE in the newspapers brought out little that was definite. It still appeared certain, however, that we would hold out for U. S. use of all bases built with U. S. funds - possibly in return for some kind of trade by which Britain (and perhaps other nations) can acquire some of our great postwar excess of transport planes with which to get started in the postwar air. That was obviously a matter to be handled with great care. On it might hang much of the whole future of U. S. foreign airline operation.

"FREEDOM OF THE AIR", in the sense of our allowing foreign planes to fly within the U. S., carrying passengers and cargo from one U. S. point to another, seemed certain never to happen, however much Britain and other nations might want us to grant it.

THE "CHOSEN INSTRUMENT" THEORY, by which one company would be picked to do virtually all U. S. airline operation in the international field (as a matter of fact the actual U. S. policy before the war) took another setback as AMERICAN AIRLINES (No. 1 domestic airline) bought control of AMERICAN EXPORT AIRLINES, only U. S. company beside PAN AMERICAN admitted to foreign airline operation by the U. S. before the war. It won't be a merger, both AA and AEA emphasized, but inevitably Pan Am's Juan T. Trippe, No. 1 exponent of the "chosen instrument", would

get a tougher run for his money with AA's not inconsiderable money and brains now directly interested in transoceanic flying.

MEANWHILE, IN CONGRESS, Nevada's Senator McCARRAN introduced a bill to put the "chosen instrument" idea in effect. Only notable result: storms of protest from almost all the domestic airlines (except United, which is in favor of the "chosen instrument"). One of the most articulate expressions on this as well as the problem of whether RAILROADS AND SHIPLINES should have a chance in the air was that of Capt. Eddie Rickenbacker (See p. 9).

McCarran's bill, however, wouldn't hand the whole pie to Pan American. It would set up a company, in which no airline could hold more than 25%. Washington observers quickly forecast, however, that if the bill is passed, Trippe has the inside track for the line's presidency.

ON THE AIR PRODUCTION FRONT, a major milestone, with postwar as well as wartime promise, was set by GENERAL MOTORS' booming ALLISON DIVISION, which proudly delivered its 50,000th liquid-cooled engine to the Army, passing a total of 60,000,000 air horsepower produced for war.

CANADA'S POSTWAR PLANS, meanwhile, moved ahead. Now definite is a full divorce of air from rail after the war. Trans-Canada and Canadian Pacific airlines will be split from Canadian National and Canadian Pacific railways, new airlines reserved for airmen's development. TCAL will definitely be Canada's "chosen instrument" for the international field. CPAL meanwhile plans to concentrate on "integrating" its many north-south lines, declares it has no intention whatever of trying to buck TCAL's transcontinental line (as mistakenly reported in AT last month).

POSTWAR AIRPORT PLANS for the U. S., the Civil Aeronautics Authority reveals, include 6,000 airports. CAA is at work on plans to be submitted to Congress designed to bring air transportation's benefits to nearly all of the 6,670 cities, towns and villages of 1,000 population or more in the whole country. The Public Buildings Administration had another plan: airports on top of or nearby every postoffice in every city of 25,000 or more.

Keep the Air Free For Airline Competition, Bar Ships, Rails

Rickenbacker Delivers Eloquent Plea, Outlines His Platform for U. S. Action Now in International Field

By CAPTAIN EDDIE RICKENBACKER
President, Eastern Airlines

THIS is the air age. But as yet we have not reached even the noon hour of aviation. On the contrary, the sun is barely above the horizon in the dawn of human flight. We have just started. We have just begun to fly.

But even at this early hour, because of its speed and cruising radius, the plane has shrunk the globe. It has narrowed the seas—dwarfed the mountains—and whittled down the continents by virtue of the conquest of time over distance. We no longer think in terms of miles—but hours and minutes. So when we speak of the age of flight, our thinking must keep up with—yes, even go ahead of—the great procession of air transportation that is just beyond the horizon.

We must learn to visualize the earth as banded not only by the unseen lines of longitude and latitude, but surrounded as well by a comprehensive but invisible network of global airways that link the continents—the countries—and the leading cities of the world. But we mustn't forget that planes can't fly the great distances—no matter how fast they go—without stopping at ports where fuel—repairs—and weather information are available and, incidentally, a few pay passengers.

These bases must be developed in all parts of the world to meet the needs of a system of global air transport. It sounds simple when you say it—doesn't it? And it would be simple were it not for the fact that even at this late date, American leaders are unable to agree among themselves on the question of our international aviation policy.

While they are making no headway on the issues of monopoly versus open competition, other countries are shaping up their programs for post-war international air transportation. And the bitter irony is that the stepping stones of these networks—the well-equipped airdromes, built by American men with American money and material throughout the world from Greenland's icy mountains to India's coral strand—seem to be destined to be given away as Christmas gifts with Uncle Sam in the role of Santa Claus.

This must not happen. Congress should establish, without delay, a super-board or council comprised of outstanding representatives from our Army, Navy, Air Forces, Treasury Department, Post Office Department, Civil Aeronautics Board, Air Transport industry and, last but not least, our State Department, with an elder statesman as chairman.

This board or council should take immediate steps to protect our birthright in the billions of dollars we have expended on other people's property throughout the world in the form of airports, hangar and shop installations.

Instead of having agreements which

now permit the use of these well-equipped air bases for only a period of six months after the war is over, we should have a five-point program in agreement with all other nations for the use of these facilities covering the following:

Freedom from customs while in transit.
Freedom of communications.
Freedom of weather or meteorology.
Freedom from higher tariffs or rentals than are being paid by the nationals of those countries for the use of their airports and facilities created and financed, directly or indirectly, by Americans and American money.
Freedom from cut-throat subsidies.

With these five basic agreements elaborated on in detail, American free enterprise, ingenuity, and energy will be given an opportunity to flourish and I can guarantee that they will hold their own with any and all peoples of the world.

In that way, and that way only, will we in the aviation industry be able to help protect the investment of sacrifice which our American boys are fighting, bleeding and dying for, to win the war. In that way only, will we be able to protect the interest of generations of tomorrow whose work and wages will be largely dedicated to reducing the mountain of debt created by this war.

Army, Navy Must Carry On

It would be impossible to establish sound and workable international airways systems overnight. Therefore, in order to protect Uncle Sam's stake on the international airways, and to prevent others from jumping our claim, I present this recommendation. Before the end of the war there should be established a unified Army and Navy Transport Command for the purpose of continuing our operations around the world.

This unified military air transport service would carry not only military representatives and materiel, but also would be permitted to carry commercial passengers, mail and express during this interim, the receipts for which would be returned to the Treasury Department.

This recommendation would keep America represented not only on the international airways but also afford opportunity for the gradual taking over of these operations by the commercial air lines of the United States by those that are qualified—and there are many.

Above and beyond that, there is the matter of public interest and support. American public opinion, at the present time and rightfully so, is too concentrated on the winning of the war—the restoration of normal peacetime happiness—working conditions—and living conditions after the war—as well as shouldering the burden of taxes—to think deeply about our place on the airways of the world. In view of that, it is not difficult to understand the general indifference toward the future of international aviation.

By having our military air services and air experts keep the international airways in operation, we keep the door open for the day—one, two three or five years from now—when our public will understand the importance of supporting the demands for American rights and privileges on the airways of the globe. This will give our leaders and Government the popular support so badly needed.

No nation, or group of nations, can claim or establish monopoly of the airways and at the same time be in line with our long-proclaimed war aim, namely—a free—open—and progressive world.

By keeping the door open for future planning, we would also have a large number of transport planes in international service. This would keep large numbers of air and ground crews not only employed at their chosen art, and let them be returned to civil life as commerce and industry were able to absorb them, but also would help support the aviation industry of America in its hour of need.

I have stated before—and I shall state again—and again—until it reaches and reverberates from Cape Cod to the Golden Gate—from Corpus Christi on the Gulf of Mexico to Point Barrow on the Arctic Ocean—we must definitely and unalterably oppose the single international aviation company — or the so-called chosen instrument.

For that would be the sure and direct route to the un-American evils of government ownership—or inner-sanctum cartels. It is the road to ruin which our friendly competitors in the old world would like to see America take.

The chosen instrument, or World Airways Trust, with its inherent inefficiency, would be the easiest and simplest type of competition our competitors could be called upon to face, as they have been internationally minded for centuries,

whereas we have a lot to learn in that kind of a game. On the other hand, foreign air monopolies truly fear the frank and free competition of American air transport companies with their "know-how"—initiative—and energy to back it up.

Even while we are discussing the relative merits between the chosen instrument and regulated open competition, the English and Canadians, who have been operating with the chosen instrument, are now discussing ways and means of eliminating it for the more logical and stimulating regulated open competition for themselves.

Surface Carriers Don't Belong

Today, our independent air transport industry is being attacked from two sides —on one side by certain railroad interests, and on the other side by certain steamship interests. These groups are waging a campaign to break down the provisions of law designed to guarantee the independence of America's air transportation.

The present law does not prohibit railroads and steamship companies from controlling or operating air lines. It does, however, contain a provision, in line with sound precedent in other transportation legislation, to assure that a surface carrier can be permitted to operate or control an air line only if the air line is supplementary to the surface carrier's surface operations.

It is the purpose of the provision to forestall, by express mandate of law, any possibility that surface carriers might attain a position dominating this new form of transportation, driving out independent interests, and suppressing its development.

The surface carriers, on the other hand, would have Congress repeal this mandate and leave entirely to the discretion of a government bureau the extent to which such interests should control the air. This amounts to an advocacy of rule by bureaucracy instead of by a wisely formulated mandate of the duly elected Congress.

This assault upon the independence of air transportation has been spearheaded by a vast propaganda organization known as the Transportation Association of America, clothed in the innocent garb of purported goodwill. A Senate Committee not so long ago revealed that this Association is but the front for the railroads—its birth conceived and paid for by the same railroad interests which for years have been attempting to secure a strangle hold upon the independent trucking industry of America.

The aim of these groups is to create what they describe as "integrated transportation companies," that is, companies engaged in all forms of transportation. They start with the assertion that our transportation facilities are over-expanded. Their necessary conclusion is that huge monopolistic combines will remedy this evil. I trust a $64 name like "integrated transportation companies" bestowed upon the familiar old man "monopoly" will not fool the American people. Nor will American farmers, merchants and manufacturers be sold any bill of goods to the effect that alleged over-expansion in transportation is to be remedied by curbing the development of aviation.

Railroads Muffed Chance

The surface transportation interests had a wide opportunity to develop air transportation for nearly fifteen years. Their utter failure to do so is a matter of history. That development was left to independently owned and financed air lines who went forward despite every conceivable obstacle and in the face of great financial loss.

When war came we had an air transport system. Had it not been for those independent interests, and had the destiny of air transportation been left to the surface interests, war would have found us with no air transportation worthy of the name.

Now, however, the surface interests have moved in. Now that the field has been plowed, and the crop has been carefully nurtured, they want to reap the harvest and dole out its fruits to the American public in the manner which will best protect their vested interests in their ground facilities.

Free enterprise has been the genius of our institutions—free not only from undue encroachment by government but free from undue concentration of economic power in the hands of a few.

For air transportation to come under the control of the powerfully financed surface carriers with their interlocking relationships and their vested loyalties in their

railroads and steamships would doom free enterprise in air transportation.

They fear the growth of a child whom they have neglected these many years. Their remedy is to stunt and enslave that child for their own protection.

The barrage of propaganda with which these interests are bombarding the people and the Congress, of course, does not express their desires so bluntly. It is more insidious.

It advocates that a single company engaged in the several forms of transportation will be able to present the shipper and the passenger with convenient choice between means of transport.

Shipper's Choice Must Be Free

But the shipper and passenger should have the opportunity of making an intelligent choice of several competitive modes of transportation, each developed with undivided loyalty and providing the best possible service to be offered to the public as true alternatives vigorously competing to serve the public need. That end can never be achieved by delivering air transportation into the hands of those whose loyalty must first and always be to their surface facilities.

Shall the American people allow their elected representatives in Congress to change our 30-year-old policy of preserving honest competition between all forms of transportation and keeping aviation free from the clutches of other forms of transportation?

America was late in and unprepared for its entrance into the war. Let us not be late in and unprepared for our conversion to peace in the aviation industry.

Every industry—every business in the country has been torn out of its normal orbit in the interest of war production. But, looking the field over, I do not think that any industry has gone through a wider swing of the pendulum than the aircraft industry.

Today aircraft manufacturers have a twenty billion dollar enterprise. You may not realize it, ladies and gentlemen, but that is more than four times the size of the automobile industry at its pre-war peak.

Our aircraft industry is producing planes at the rate of approximately nine thousand per month, as well as additional aircraft engines and equipment necessary. In exactly three years, the industry has produced one hundred and fifty thousand planes. And from the latest reports, twenty-one thousand combat planes and seven thousand other types of that number have been sent to our Allies.

The spirit of leadership which has made this pace of production possible in the interest of Victory, must not be lost in the interest of Peace.

It will be difficult to do this, under existing conditions, if aircraft workers worry about how soon the floor will fall from under them and expose them to the torments of idleness.

One of the main reasons for the costly labor turnover in the aviation industry is fear that the industry will collapse and jobs vanish when the war ends.

To prevent this, every effort must be made by our Congress in cooperation with the aviation leaders to keep this vast industry at work by creating a post-war policy that will keep our aircraft factories operating at a steady tempo when Victory is ours, and I offer the following recommendations:

1. Encourage the expansion of domestic air lines, including pickup and local services.

2. Maintain military overseas air lines until commercial companies can take over.

3. Scrap all obsolete combat and transport planes and plane equipment used by our military services over six months' old, and return the metal to augment our dwindling supply.

4. Lease only those transport planes used by our military services during the war that are in good condition and of the latest production series to our domestic and international air transport services.

5. Limit the use of these transport planes to our commercial companies to not less than one year and not more than two years to bridge the gap between the design of new and more efficient types of transport planes and their production.

6. Advocate that all air transport companies to whom the Government has leased these obsolete models for a year or two years, place orders with the manufacturing industry for an equal number of the new and more efficient types, then scrap the leased ones as manufacturers deliver new ones.

7. Develop new and more efficient types of cargo planes to be used for the ever-increasing tonnage of air cargo.

8. Keep the training program of approximately 600 training schools and colleges active by leasing to these schools and colleges

"THROUGH THE WORLD'S *dirtiest* WEATHER....."

This is the Burma Road of the air! It hurdles the Himalayas. It bores through the world's worst weather. Yet, over it, on a day and night shuttle service, Curtiss C-46 Commandos carry to China a greater weight of supplies than ever wound their way up the old Burma Road.

Here winds roar, clouds are low and "stuffed with rocks", fields "sock in" with no notice, icing altitudes vary as much as 2000 feet in a day, instrument flying is the rule, oxygen is always required, Jap fighters prowl the fog and Naga head-hunters wait below.

Through this maelstrom, Curtiss Commandos lug tons of vital cargo. Many of them have accumulated hundreds of hours of flight time with little maintenance other than that offered by the crude facilities of temporary bases. These planes have proved their merit under the toughest conditions known to flight. They'll prove it again when they make their bid as peace time transports and air cargo carriers. Curtiss-Wright Corporation, Airplane Division, Buffalo, St. Louis, Columbus, Louisville.

the surplus training planes for a period of one, two or three years with the express understanding that each training school will place an order for a new and more up-to-date training plane for each one leased to them by the Government. As the new planes are received from the manufacturer, the leased ones would be returned to the Government to be scrapped.

This would open up a tremendous market among the youngsters who were being trained and who would wish to purchase and fly their own plane as private owners.

9. And last, but not least, enact legislation that will make *all first class* mail that travels beyond 150 miles—*air mail.*

I know some of these recommendations will seem fantastic to many, and will fall on some deaf ears.

My recommendation for the scrapping program mentioned above is based on the fact that 75 per cent of the estimated 15,000 to 20,000 transport planes, as well as the combat planes now being used by our military services will be obsolete, and should find their way back to the empty materiel bins. For we must remember that these planes have already been paid for and the loss would be insignificant compared to the loss through the collapse of our aviation industry—to say nothing of the vast unemployment that would accompany such a disaster.

Further, our research laboratories, engineering geniuses and the aviation industry would be given the opportunity of designing and building new planes for replacement in our military and air transport services, as well as the training schools and private owners, thereby keeping our technical units up-to-date and abreast of the times, need and demand.

We must realize that in spite of the beautiful rainbows which are being painted, there is a practical approach for post-war aviation which means that we will need, in domestic as well as international air transport, the new and more efficient designs in order to help lower our tariffs and fares—to say nothing of the ton-mile cost on express and freight—so they will be in keeping with the new and lower standard of living, while our debt of hundreds of billions of dollars is being liquidated.

Certainly, above all else, we must not make the same fatal error we made after World War I when all surplus military aircraft was thrown on the open market thereby flooding it, and practically destroying the manufacturing industry for many years after.

Such an aviation program would bring with it widespread construction activity in providing ground and airways facilities. There would be at least three distinct types of airports needed in metropolitan centers throughout the country:

1. From one to three airports, depending on the size of the communities to serve passenger carrying planes only.

2. From one to three airports, depending on the size of the communities to serve first class airmail and air cargo planes only.

3. An integral system of airports and landing strips for private plane owners, charter services and training schools, distinct and apart from the first two, in order to keep the airways and commercial ports clear, and thus minimize the hazards.

But, as stated previously, plans for such a program must be developed *now*, and by the leaders of this industry.

This is no time for defeatism on the part of our aviation leadership. Today, America needs leaders! Leaders who will show their colors and courage as never before. Failure, through fear of being criticized, smeared, or a loss of temporary special privilege, is nothing but cowardice and un-American. . . .

Today the aviation industry—both manufacturing and transport—has one of the greatest opportunities in its history to prove its leadership in developing a post-war program which will result not only in a quick conversion from wartime to peacetime production and expansion, but will help rehabilitate and reestablish the hundreds of thousands of our service men who will be returning after the war is won.

There is a good old American axiom to the effect that—"The sky's the limit." No, the sky is not the limit—there is no limit to the future.

Look where we were in 1844. Some say —those were the good old days! Well, I'll take TODAY—thank you! And TOMORROW, too!

I have faith enough in the American people to feel that all the headaches—heartaches—and soul-searing agony, that we, as a nation, must endure will pay dividends in the future.

My toast is to TOMORROW! My prayer is for TOMORROW! My faith is in TOMORROW!

Air-borne foods admired at Detroit: Chairman L. Welch Pogue, of the Civil Aeronautics Board; Wayne University's research head, Dr. Spencer A. Larsen, Agriculture's Claude R. Wickard listen to Colonel Edward S. Evans on his favorite subject.

Food Will Fly—I

233 Times Total 1941 Volume Of Air Cargo Seen As Early Postwar Potential of Foods Alone

GARDEN-FRESH fruits and vegetables, shipped in great quantities by air directly from the main growing centers, will be available to consumers throughout the U. S. after Victory, even though air-freight rates remain substantially above those of conventional carriers.

Such is a major conclusion of a new and far-reaching study of actual and potential traffic in fresh produce completed by a group of Wayne University (Detroit) professors headed by Dr. Spencer A. Larsen and published last month by the Wayne University Press.

The study forecasts that when peace returns *fresh produce alone will furnish enough air cargo to total over 233 times the combined weights of all commodities carried by air in 1941*, provided air-freight rates can be reduced to five cents per

ton-mile—a figure many authorities see as possible in the near future. Even at seven cents, fruit and vegetable traffic equal to 80 times the 1941 figure for all air express is expected to develop.

The Wayne report is the first exhaustive survey of its kind and will be followed by a series of studies designed to explore the entire air freight picture in its relation to other forms of transportation. The report embodies the results of an investigation begun more than a year ago under a grant made to the University by Colonel Edward S. Evans, loading authority, aviation pioneer, and president of Detroit's Evans Products Co.

"These Wayne studies have been undertaken with a free and open mind," Colonel Evans took pains to point out, "and without any preconceived idea of 'making a case' for air cargo. The motivating thought is to produce through scientific research a reasonably accurate picture of the potential of air cargo in the postwar world. This picture is important to airplane manufacturers, airline operators, and producers and distributors of commodities. And it is necessary to the city planner, faced with the problem of determining the place which cargo airports should occupy in our cities. The consumer, too, is already concerned with the effect which air transport of cargoes will have upon higher standards of living in the more closely knit world of the Air Age."

While the major part of the Wayne report is concerned with traffic movements, it also underscores the benefits which will accrue to the consumer as a result of more rapid transport.

"Before the war," it states, "produce was in transit from California to Chicago seven days and to New York nine days. An airplane flying at 175 miles an hour would negotiate the Chicago haul in about 12 hours. Hence, a plane-load of produce leaving California at 6 p.m. (EWT) would arrive in Chicago the following morning about six o'clock or in New York by noon."

Saving in transit time, it claims, will benefit perishable foods by allowing time for fuller development and ripening on vine or tree, thereby increasing weight and improving flavor and nutritive content. Less shrinkage and spoilage will be suffered, resulting in a reduction in claims. And increased sales life will be given to the produce so that it will hold up better in the hands of jobbers and retailers.

The report stresses the contribution which rapid air transport can make to public health through retention of vitamin content and shows that fully half of the original vitamins contained in fresh fruits and vegetables when picked are lost during the week or longer required for conventional transportation from grower to consumer. Much of this loss, it is indicated, will be eliminated by speedier transport, bringing about material savings in the nation's bill for concentrated vitamins, which in 1942 amounted to over $140,000,000. This saving, it claims, should aid materially in offsetting the higher prices which air-borne produce will command.

Estimates carried in the study on the amounts of fresh fruits and vegetables which will be saleable at these prices were arrived at with the aid of a jury selected with the advice of field representatives of the Department of Agriculture, terminal managers and trade association executives. The jury included three carlot wholesale receivers, three chainstore produce merchandisers, two wholesalers serving the independent retail trade, one jobber to restaurants, hotels and institutions, and a

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In Detroit last month close to 1,000 people met at the Book-Cadillac for what may go down as a rather historic luncheon. Designed to illustrate the possibilities of air transportation of food. as well as to celebrate the coming of age of the Edward S. Evans grant to Wayne University for air cargo research with its first report, the luncheon concentrated on many an exotic food—every one brought to Detroit as an air cargo item.

Herewith, *Air Transportation* presents the major portions of the principal addresses of the meeting, those of Secretary of Agriculture Claude R. Wickard and of Colonel Edward S. Evans, donor of the Evans Grant.

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steward for one of the nation's largest hotels.

The 110 pages and 54 tables in the report make no attempt to deal with operating costs. They are concerned exclusively with the problem of measuring the prospects of transporting 43 different items of fresh produce by air at rates of three, five, seven, 10 and 15 cents per ton-mile—rates which have all figured in recent speculations of air cargo experts. In the forecasts, only traffic moving more than 250 air-miles was considered.

Ten "guinea pig" cities, embracing 46 per cent of the population of all U. S. metropolitan areas, were singled out for concentrated study: Boston, New York, Philadelphia, Chicago, St. Louis, Atlanta, Washington, New Orleans, Los Angeles and San Francisco. Their produce terminals unloaded 28 per cent of the 28,000,000,000 ton-miles of traffic in fresh fruits and vegetables transported in 1941.

Pointing out that in 1941 the volume of all air-borne express totaled only a little over 4,000,000 ton-miles, the study predicts that if the admittedly optimistic three-cent rate can be achieved, fully 4,000,000,000 ton-miles of traffic in fresh fruits and vegetables will become available for air transport. At five cents the prospective traffic amounts to 1,000,000,000 ton-miles, and at seven cents stands at a third of that figure. At the ten-cent rate, somewhat less than 50,000,000 ton-miles are indicated, dwindling to 25,000,000 at 15 cents. However, the report emphasizes the fact that even this figure is six times as great as the 1941 total for all air express.

Anticipated ton-mile figures for fruit are: at 3c—2,078,136,000; at 5c—272,261,000; at 7c—90,154,000; at 10c—24,806,000; and at 15c—3,765,000. For vegetables, the indications are: at 3c—1,940,610,000 ton-miles; at 5c—695,452,000; at 7c—242,974,000; at 10c—38,909,000; and at 15c—20,656,000. Seasonal movement of traffic is expected to be fairly even at rates of seven cents and below.

At the seven-cent rate, the point at which the potential cargo reaches respectable proportions, the findings reveal that strawberries, raspberries, cherries and peaches will take to the air in considerable quantities, together with lesser amounts of pineapples, cantaloupes, avocados and apricots.

Among vegetables, prospects for heavy shipment of tomatoes, corn, asparagus and beans is indicated, with lesser quantities of endive, lettuce, peppers, spinach, peas, brussels sprouts, cabbage, cucumbers, radishes and shallots. At the lower rates, enough other items join the ranks to swell the total to 43 individual commodities. Even at the 10-cent and 15-cent rates, strawberries, peaches, tomatoes and beans show definite propensity to air transport.

Significant shifts in the amounts of available cargo occur as freight costs decline. For example, bananas, which are not air candidates in the higher brackets, jump into first place at the three-cent rate.

The research reveals that more than half the total potential traffic will terminate in the New England and Middle Atlantic states, and 31 per cent in the North Central group. The South Atlantic, South Central, and Mountain and Pacific trail in that order. Among the shipping states, California stands first, originating (in ton-miles) 47.7 per cent of the traffic moved over 250 miles. Florida ranks second with 11.7 per cent and Texas third with 5.5 per cent.

Railroads, trucking lines and water carriers will not be materially affected by the inroads which air transport will have on their business, according to the Wayne study.

"Any diversion to air," it states, "is likely to be offset by an increase in traffic brought about by the natural growth in population, by totally new traffic waiting to be developed, and by improved standards of living. Because of the speed of the airplane and the comparatively direct routes which it can follow, the outlook for its future as a cargo carrier is at least encouraging."

Rotary Shears Fly Half-Way Across Continent Overnight

In urgent need of rotary shears with which to carry on a vital phase of war production, Lockheed Aircraft Corp. appealed to the Army Air Force for aid. The AAF was quick to cooperate; two Quickwork-Whiting rotary shears, each weighing 2,000 lbs. were picked up at the Whiting Corporation plant in Harvey, Illinois, loaded into an Army plane, and flown overnight to Burbank. Within 24 hours of their completion, the shears were in operation in the Lockheed plant.

Food Will Fly—II

Agriculture's Wickard Foresees Vast Progress in Address To Detroit Cargo Meeting

By CLAUDE R. WICKARD
Secretary of Agriculture

IT is a great privilege for me to be accorded this place of honor on your program today. I want to congratulate Wayne University, the Detroit Board of Commerce, the United Fresh Fruit & Vegetable Assn., the air transport companies, and others who have helped to make this unique luncheon possible. Also I want to congratulate Colonel Edward S. Evans of Detroit for his foresight and public-spirited interest in making possible the air cargo research fund here at Wayne University.

The fact that the excellent fresh fruits and vegetables, including tropical varieties, served here today were flown to Detroit by cargo airplanes is sufficiently novel and prophetic of things to come to stir the imagination and arouse the interest of everyone. We have tropical foods here so unusual to this country that the aid of the Department of Agriculture was solicited in preparing a special set of recipes for cooking and serving them.

The in-season products of soil, sunshine, and labor on our menu here today were flown in from our own southern states, from the southwest, and from the west, while the tropical foods came from the Caribbean area. To most of us this is symbolic of a new milestone in a phenomenal era of transportation progress. . . .

The telescoping of time and space presents to us both a challenge and an opportunity. Our whole economy will, I believe, feel the impact of a greatly expanded air transportation program in the postwar period. In agriculture, for instance, I am convinced that through air transport there is a very real prospect of developing a new and improved method of moving certain perishable farm products—benefiting both producer and consumer—and also opening up a new use for the vastly expanded air industry of this country.

The importance to both industry and agriculture of speeding up the exchange of industrial and agricultural products is readily apparent. To agriculture it offers a quicker and surer market for some commodities. Likewise, such an exchange would assist in making available markets for industrial goods and jobs for factory workers, which means purchasing power in the hands of city people. Those of us in agriculture have long been aware of the fact that farm people can't prosper unless city people have the money with which to buy the things farmers produce.

Immediate Air Transport Of Food Called Possible

With regard to air shipment of farm products, the greatest possibilities for new and more revolutionary developments, of course, lie in the post-war period. However, there appears to be the almost *immediate* possibility of inaugurating a program for the shipment by air of certain perishable farm products. This prospect is predicated upon the assumption that transport planes as they are now designed and built could be used as they are released from war duty, rather than necessarily to wait for newer designs that might be turned

out some time after the war. I am told that some transport planes are already being made available to airlines, and it is reasonable to expect that after the war many more will be available.

An additional advantage . . . is the possibility of providing employment for our highly trained pilots, aircraft mechanics, and technical and other personnel for aircraft as they come back from the war.

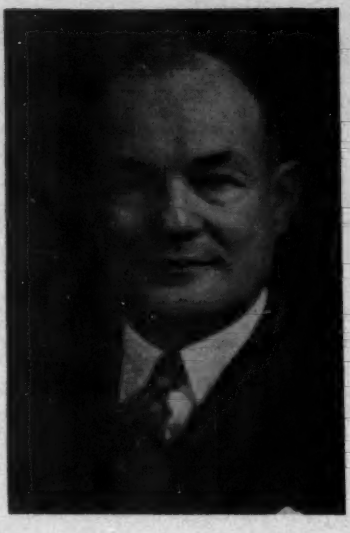
Since these cargo planes are already being released from war duty, it seems plausible to consider seriously the possible results if air cargo service for the transportation of certain agricultural products were begun at an early date. We know that the farm commodities best suited for the present to air transport are those that demand high-speed transit or special care in handling. Certain fruits and vegetables are of this type. *If the airplane can get the produce to the consumer in a more palatable and nutritious form, the consumer will gain by getting a better product and the producer stands to gain by obtaining a larger income because of the greater demand for his product.*

One of the chief factors upon which the success of such a venture on a commercial scale depends is, of course, the comparative costs of air cargo transportation and surface methods of shipment. . . .

Strawberries and Tomatoes Offer Special Promise

We realize that for air transport strawberries and tomatoes offer perhaps the most promising prospects of any of the perishable foods, but the possibilities are by no means limited to these two commodities. Information or experience gained in connection with strawberries and tomatoes will no doubt be useful in considering the air-shipment possibilities of other fruits and vegetables. I should like to report to you briefly some of the highlights of the findings, particularly of the study in which the Department of Agriculture cooperated.*

Under conditions assumed, a cargo plane would have a payload of four and a quarter tons of strawberries from Lakeland, Fla., to Detroit, for example, or the same weight of tomatoes from Miami to Detroit. When air transport costs are compared with the fastest surface methods of transit now being used for these commodities, *air charges are only six cents per quart higher for strawberries and the same figure per pound higher for tomatoes.*



Claude Raymond Wickard was born Feb. 28, 1893 on the Carroll County, Ind., farm that had been in the Wickard family since the 1840's. He received a degree in animal husbandry from Purdue in 1915 and returned home to manage the farm. He continues to manage the same farm from Washington today.

In 1933 he was made a member of the National Corn-Hog Committee of Twenty-Five which helped set up the original AAA Corn-Hog Program. Soon he was appointed assistant chief of the AAA-corn-hog section; in 1935 he was made chief. When the AAA inaugurated its agricultural conservation program in 1936, he was named assistant director of the north central division, and in a short time was made director. He was appointed Undersecretary of Agriculture in February, 1940, after six and a half years with AAA and was made Secretary of Agriculture on Sept. 5, 1940.

As now handled, most fresh tomatoes sold at retail during the winter months are picked when green in the field. After being picked green, they are wrapped and shipped to ripening plants in the large northeastern consuming centers. In the ripening plants they are unwrapped, sorted, put into ripening rooms with controlled temperatures, and after ripening, are re-sorted and packed for sale. It is easy to see that by packing the tomatoes directly into consumer packages in the

producing area labor costs are reduced and less handling occurs, thereby cutting down on spoilage and waste resulting from bruising in handling. These savings would tend to decrease further the net difference in transportation costs between sky hauling and surface hauling.

Still there is another significant factor to take into account when weighing sky hauling against surface hauling. That is: *A saving in both time and weight in packaging by using paper containers instead of wooden crates as now required.* This may have two noteworthy effects: One, by decreasing the weight of the container, the unit cost of transportation is reduced; and the other is that by packaging the food in the area where it is produced into consumer-size packages, a saving is effected in labor costs and spoilage is reduced.

Competitive-with-Rail-Rates Considered Wholly Likely

After considering the savings to be gained by air transportation there is reason to believe that tomatoes can be placed on retail counters in the winter season at practically the same price as those transported by surface carriers. They could not successfully compete, of course, with the locally grown, vine-ripened product.

In considering cargo shipment by air, we should not lose sight of the fact that the principal advantage to be gained, through faster transportation, is in the *improvement of the quality of the product as it reaches the consumer.* To bring strawberries, for example, from Florida to Detroit by rail express requires a minimum of three days, and by rail freight and truck, a minimum of four days. Tomatoes take slightly longer. By air, the time required is between seven and eight hours.

Think of what this means. Produce may be harvested during the forenoon of one day, pre-cooled in the afternoon, loaded on the plane in the evening, transported overnight to the northern consuming centers and placed it in the retail store less than a day after being harvested. This makes it possible to harvest produce in a much more advanced stage of vine-or-tree ripening with, in most cases, considerable increase in its palatability, vitamin content, and yield per acre.

There is ample reason to believe that movement of produce by air would make a significant contribution to the public welfare, not only from the standpoint of increased satisfaction to be derived from the pleasure of eating a better product but also from the standpoint of improved public health.

The fact that the public has spent tremendously increased amounts of money on vitamin pills in recent years might be an indication that the people would readily appreciate the value of getting more of their vitamins from fresh produce.

We know that vitamin C, for example, is a very important part of our diet. This vitamin, which is needed to build body tissue and bones and to fight infection, is found in abundance in fresh fruits and vegetables. And the fresher these foods are, the higher the vitamin content. Tests show that stored or slow-transit fruits and vegetables lose appreciable amounts of their vitamin C content, particularly at warm temperatures or when the produce is in a bruised condition.

For those who find pleasure in new and different foods, the possibilities of bringing in tropical varieties from the Caribbean area by air offer interesting prospects. In addition to supplementing our supply of perishable foods, this commercial tie-up with our neighbors to the south would, no doubt, do much to strengthen our Good Neighbor relationships.

I want to make it clear that we realize that the feasibility of this air-cargo-transport idea for perishable foods depends upon the answers to some problems yet to be explored. There are several unknown factors in the practical application of this project. We are aware of the fact that it is only through further study and the actual stocking of the produce in stores that a determination can be made as to whether or not the quality of the produce will be sufficiently improved through fast transportation by air to offset any premium in price to the consumer that may exist under actual commercial conditions.

Should the optimistic view prove to be true, and the difference between air-and-surface transit charges be eliminated or otherwise entirely compensated for, I believe it is not trite to say that the sky is the limit for the future of certain types of farm-produce shipment by air.

As for the farmers of this country, I am sure they will be enthusiastically watching the developments in the air-cargo field. A favorable turn of events along this line could be a great boon to their business—particularly in the postwar period.

ANY AIR EXPRESS shipment that's packaged, labeled and ready to go . . . SHOULD GO! Don't let it SIT! Call AIR EXPRESS right away...instead of waiting for "routine" afternoon pick-ups. Your shipment thus avoids end-of-the-day congestion when Airline traffic is at its peak. That's the secret of getting fastest delivery! SHIP WHEN READY!

And to cut costs — AIR EXPRESS shipments should be *packed compactly* but securely, to obtain the best ratio of size to weight.

A Money-Saving, High-Speed Tool For Every Business

As a result of increased efficiency developed to meet wartime demands, rates have recently been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks—with 3-mile-a-minute service direct to hundreds of U.S. cities and scores of foreign countries.

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Food Will Fly—III

Planes Must Improve To Meet Rail Competition, But Railroads And Ships Still Have Big Future

By COLONEL EDWARD S. EVANS
President, Evans Products Co.

THIS luncheon marks another milestone in the progress of aviation. The war has made us leap-frog many milestones. But from the standpoint of post-war aviation—and the consumer of air-borne goods—this is probably the most significant milestone since air cargo transport has been discussed.

Ripe fruits and fresh vegetables are served here today which only yesterday vibrated on the vine thousands of miles from each other. "Picked yesterday—eaten today" will be the slogan of tomorrow. This marvelous concept in merchandising and transportation is not new. The Incas, at the time of the Spanish conquest of Peru, had fruits and vegetables from the lowlands served on their tables twenty-four hours after they had been picked in the gardens and orchards a hundred miles away. But the Incas had to depend for these delicacies on fast human runners. Today we look to the heavens for our swift runners, and not only just the favored few but everyone will be able to enjoy the benefits of air transport.

The studies being made by Wayne University are giving the public for the first time a practical basis for more accurate comparison between air cargo transportation and conventional methods. These studies permit a shipper at a glance to see whether it will pay him to ship by air or otherwise. Airlines can ascertain from these studies what business they can develop at various ton-mile charges. Thus, the whole picture of air freight transportation takes on a tangible form that it has never had before. The railroads can adjust intelligently by using these charts of probabilities. A business man can more accurately calculate the potentialities of air cargo. For the first time we can estimate aviation's proper place in cargo transportation.

I have been accused of being an incorrigible optimist where aviation is concerned. In 1929 I had the pleasure of making a speech before the U. S. Chamber of Commerce in which I said:

> I believe that we are going to see great airliners—perhaps with a speed of 90 miles an hour—carrying 50 to 100 tons which will be used for transporting our freight. Those planes will burn low priced fuel, and they will transport their freight cheaply enough for the business men of the country to use them.

Time has proved how conservative I was!

But I shall have to debunk some popular conceptions about air cargo. Daily we hear that after the war the Government is going to sell its *Liberators* and *Flying Fortresses* for a song, and that buyers expect to convert them to air transport and reap a fortune. This is *bunk!* It would be like converting a battleship to a tramp steamer and economically just as impractical. With such a conversion it would be impossible for the operator to meet competition from well-designed new air transports built specifically for cargo carrying.

More important still—it would be dis-

astrous to the engineering and commercial development of air transport and to the future of the air cargo business to have the Government's military bombers tossed into the open market. It would be equally dangerous to have the present 15,000 military transports bargained off without the most careful study. Such a procedure would retard aircraft development for a decade. Military *transports* in limited quantities—some of which were originally taken over from the airlines and converted to military use—should, of course, be utilized to bridge the air transport gap until modern cargo carriers can be built and delivered.

Railroads Need Not Fear

It has also been said that air transports will put the railroads out of business. Bunk! The freight which may be expected ultimately to take to the air totals about three per cent of that now carried by the railroad. If in the *next five years* or so, aviation can woo one per cent of this total freight, it will mark great progress in air transport.

To make a fair comparison of air transportation with the railroads, we have to go back to about 1850 when the railroads were still struggling with their engineering and operational difficulties. Today in 1944, airplanes as a means of freight transportation are at about the same level of progress that the railroads were in *1850*, or trucking was in 1915.

To meet rail competition the airplane must improve in many categories. For instance, the use of Diesel motors which would reduce the fuel cost of planes by about 80 per cent. The Germans have used Diesel airplane engines for a long time. The Packard Motor Car Co. in the late 20's, under Captain Woolson, produced a small Diesel engine weighing about one pound to the horsepower which flew successfully. His death stopped the development. The jet propulsion engine doesn't burn 100-octane gasoline. I am told it can operate on a comparatively cheap fuel mixture. Further progress in cheaper fuel should be expected.

In the field of gliders we have yet to build a locomotive of the air designed properly for the glider train operation. Gliders, as freight cars of the future, are still in their infancy, and they lend themselves to many economies that have not yet been tried.

The Author

One of the foremost proponents of freight cargo planes in this country, Colonel Edward S. Evans is a former president of Detroit Aircraft Corp., of the Lockheed, Eastman and Ryan companies and of the Aircraft Development Corp. which built the only metal-clad dirigible in the world.

To demonstrate the practicability of the commercial transport plane, in 1926 he established a world's record by circumnavigating the globe in 28 days, 14 hours, 36 minutes. During the journey he pioneered the first flight from Moscow to Omsk. He pioneered air passenger service when a director of National Air Transport. This company was taken over by the United Air Lines, providing it with the connecting link between Chicago and New York.

Colonel Evans is the "father" of gliding and soaring in the United States, a matter of Congressional record, donor of the Edward S. Evans trophy for future gliding champions of the Army. He managed the first two Detroit Arctic Expeditions under Sir Hubert Wilkins' command.

Today, he is president of Evans Products Co., operating plants in Michigan, Oregon and British Columbia making equipment for scientific loading of boxcars, trucks, and planes.

Ships Not Doomed Either

I have been quoted as saying that ocean liners such as the *Normandie* or *Queen Mary* probably will never be built again. I believe this is true, but that flying boats will sweep the seas of cargo-carrying ships—that is bunk!

Ships are able to carry cargo for one-tenth of one cent a ton-mile, but sea planes or large airplanes may never get their costs below two cents a ton-mile. Such a differential precludes the elimination of surface vessels. Flying boats, of which the *Mars* of today is only a small sample, will, according to Glenn Martin, carry 40 per cent more net cargo than land planes of the same size and, of course, will be able to alight on either ocean or inland waters. This is a field yet unexplored.

We should have in the U. S. in all post-

war commercial centers *well-equipped cargo airports separate from passenger airports,* and at all major crossroads there should be landing strips which can be used by small planes or, in an emergency, by large ones.

Realism Is Great Need

Let's be realistic about the present but optimistic about the future. Today we are only at the beginning of the development of air transport. I look forward to a tomorrow which will see jet propulsion airplanes flying at 550 miles an hour or more in the substratosphere, and at hardly less speed, with great cargo-carrying capacity, the *Flying Wing.* The glider freight train will fill a gap in air transportation because a glider can take smaller loads and by adding or subtracting gliders to the train adjustment can be made with greater economy to cargo demands. The cargo-carrying capacity of the helicopter will be consigned to the family shopping tour or suburban deliveries.

I remember my father's telling me when I was a little boy that my grandfather was approached by Mr. Howe who wanted to sell him stock in a company for the making of sewing machines, and my grandfather decided that it was a foolish idea and that no woman would ever give up her needle for some gadget of a machine. My father regretfully told me that if his father had put up a few hundred dollars in Mr. Howe's company he would have gotten returns of over a million dollars.

Let's not discount the air possibilities of the future.

United's Patterson, As Usual, Counsels Conservative View of Air Cargo Forecasts

Substantial possibilities for postwar air transportation of fresh fruits and vegetables were stressed reservedly by W. A. Patterson, president of United Air Lines, at the National Air Cargo Luncheon and Conference held in Detroit.

Patterson, commenting on a study made by Dr. Spencer A. Larsen of Wayne University, declared the university's estimate of potential ton-miles "appears to be conservative" if per ton cost of operation eventually can be reduced to the 15-cents-per-ton-mile figure or less referred to in the study.

"It should be realized that it may be several years before the domestic airlines can offer rates as low as 15 cents per ton-mile," Patterson cautioned. "If plane-load lot business is to be established at rates approaching such low figures as are used in the survey many things will have to be done, including the design and construction of flying equipment which can be operated more economically than engineers now predict, and the development of a two-way balancing movement of traffic. We may find it necessary to assist the development of perishable traffic by taking a loss for a year or two if thereby we can develop sufficient volume to justify its continuance at rates which have some prospect of becoming economically sound."

United's president expressed his view that air movements of fresh fruits and vegetables probably would involve average hauls of 2,000 or more miles from West Coast points to the Mid-West and East; that an effective program of merchandising would be required to acquaint customers with the benefits of air speed; that airlines would have to reach into producing areas to avoid long and expensive trucking to remote airports, and that a minimum of handling would be required.

"We can only ask that the fruit and vegetable industry bear with us until war conditions make it possible for us to convert our wholehearted interest into actual transportation," he declared. "To achieve the goal will require close teamwork."

Patterson's comments were presented at the Detroit forum by J. Prescott Bolunt, coordinator of air-rail service for United's air cargo department, Chicago.

Douglas Aircraft Boasts Spectacular '43 Record

Every known world record for aircraft production was shattered when Douglas Aircraft company in 1943 delivered 96,446,000 lb. of combat planes valued at $1,000,000,000 to the Armed Forces; reduced direct manhours per plane unit more than 50 per cent; lowered per-unit cost to the military an overall 22 per cent; and paid out more than $50,000,000 in taxes.

Douglas builds both the *Flying Fortress* and *Liberator* bombers under license from Boeing and Consolidated, as well as vast numbers of transport craft.

LEADERS DO THINGS FIRST

Leadership rests upon the ability to foresee, to develop, and to achieve — first. ★ On that critical basis, weigh the position of the Allison engine. ★ Allison built the first aircraft engine in the world to receive official military rating of more than 1,000 horsepower. ★ Allison manufactured the first airplane engine in all the world to weigh less than one pound per horsepower. ★ These are only two of the thirteen major technical advances in aircraft-powering credited to Allison. ★ Leadership is earned by achievements at the forefront of development.

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P-38—Lightning
P-39—Airacobra
P-40—Warhawk
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KEEP AMERICA STRONG
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American and Maryland University Collaborate On Poultry-by-Air

The possibility of utilizing air transportation in the rehabilitation of poultry stocks in occupied countries is the subject of an experiment being conducted by the University of Maryland, under the direction of Dr. Morley A. Jull, professor of poultry husbandry.

Dr. Jull has requested the cooperation of American Airlines' transcontinental cargo service in the experiment to determine the effect, during flight, of barometric and temperature variations upon hatching eggs.

It is essential for maximum production to place hatching eggs in incubators within a 10-day period after they have been laid. Modern air transportation presents the only method of transoceanic shipment which will insure delivery within the given time period, and it is hoped that the experiment will establish the procedures to be followed in future air shipments.

Dr. Jull's proposals for the rehabilitation periods were presented recently in a paper, "Rebuilding the Poultry Industries of the Occupied Countries of Europe."

His theory is based on the fact that animal food supplies are necessary to balanced diets and reports have shown that these supplies are suffering to a great extent. A report published in April of 1943 by Dr. J. H. Richter indicate that the reductions amount to 30 per cent of pre-war levels, and since that date it can be assumed that further reductions have occurred.

Poultry have suffered more seriously than other animal food sources, and moreover, the time required for rehabilitation under Dr. Jull's plan is far less than for dairy, swine and sheep.

The proposals made by Dr. Jull seek to place the occupied countries on a self-supporting basis agriculturally as soon as possible. He recommends the establishment of community hatcheries utilizing agricultural cooperative organization existing in most of the occupied countries prior to the war, or set up with government assistance and supervision where necessary.

Essential to the plan is the fast air transportation of the hatching eggs. It is hoped that the outcome of this experiment conducted by the University of Maryland, with the cooperation of American Airlines will provide both the poultry and the air transport industries with a future scope of activities that will offer valuable assistance to the rehabilitation work of the United Nations.

It was purely a coincidence that American's disclosures came almost simultaneously with the Detroit meeting [*see Pages 15-24*], but each helped underscore the importance of the other.

PCA's Monro Licks Chops Over Future of Foods Transported by Air

Food of the world's finest restaurants can be served in any home of the future because air delivery will bring the delicacies of the world to the corner grocery store, C. Bedell Monro, president of Pennsylvania - Central Airlines, told the Washington (D. C.) Sales Executives Club last month.

C. Bedell Monro

PCA's president cautioned, however, that air freight rates cannot come down without change in equipment, that the tactical military types of planes are not suited to conversion for these purposes and that nothing radical should be expected for three to five years because "the war has resulted mainly to date in improvements, not innovations.

"With the development of the proper type of equipment and a balanced aviation industry, air transportation can reach its maximum potential in which progressive reduction of rates will broaden markets tremendously.

"Many of our finest foods are available only in their native section of the country, because of the restrictions imposed by time and preservation on their movement under present conditions. Many others lose flavor and tang when too long a period interposed between shipment and consumption. Many foods indigenous to foreign lands and never before brought to this country can be made available through air transportation.

"To adjust to this new outlook is going to take imagination, experimentation, new packaging, systems of grading, sales procedures, advertising and methods of educating the businessmen, restaurateurs and the housewives of the land.

"We will see the finest products of our farms and orchards brought to our tables within hours after they have been picked half-way across the country. This will mean an extension of the grading system, because only the finest products should be handled by air. Strawberries, as an example, can be brought from the excellent fields of Alabama in a matter of less than eight hours. Cherries from the unexcelled Traverse City section of Michigan can be brought here within a matter of less than six and one-half hours.

Air Cargo Eclipses Burma Road's Record Set with 4,500 Trucks

December Haul 'Over the Hump' Passed 12,000 Tons in Epic Wartime Performance by PAA, CNAC, ATC

FOR two years a stouthearted band of young American and Chinese flight crews—civil and military—have waged a heroic and little-reported battle* over the ice-capped peaks and jungle-covered valleys of the Himalayas, struggling through gale-driven monsoons and death-dealing Japs to deliver supplies to our hard-pressed Chinese allies.

Last month, on their first leave home after two years of war transport flying, four Pan American pilots, veterans of China's famous—and highly exclusive—"Burma Road Masters" told for the first time of how a great fleet of flying transports are now "air-trucking" over "the worst flying route in the world" more thousands of tons of munitions and supplies than ever moved overland up the old Burma Road into war-torn China.

The captains, who will shortly be back on the job, are Harold Chinn, Vancouver, B. C.; Ray Allen, Bristow, Okla.; Julius Petach, Port Vue, Pa.; Peter Goutiere, Bangor, Maine. Among the four, they hold a record for having crossed the Himalayan range more than 1,500 times.

Over the lifeline route, pioneered before the fall of Rangoon by the famous CNAC (China National Aviation Corp.), controlled by the Chinese Government, but manned and operated by Pan American Airways, the India-China wing of the U. S. Army Air Forces' Air Transport Command and the flight corps of China's own air transport auxiliary have so geared up their operations that one airplane today is doing the work accomplished by 90 trucks on the old road, the four veterans reported.

"We are now measuring our loads-delivered in thousands of tons when we used to have to measure our supplies in pounds," Captain Allen said. "Where we used to try to hold things together with six overworked planes, the Army has hundreds of its big transports flying. Pan American alone has 100 flight crews on the China job, 10 for every one we had two years ago. But to give you an idea of the size of the job the Army is doing, CNAC is moving just about 10 per cent of the current total load."

CNAC was the world's first war transport auxiliary of the air. It has been on the job since the Japs began the war with China nearly seven years ago.

"CNAC has two jobs," Captain Allen explained. "One is the regularly scheduled transport service between Calcutta and Chungking. This is the famed 'lifeline route' which has never missed a day of flying since the original Burma Road was cut off by the Jap. Carrying passengers as well as mail and cargo, this line operates over the actual crest of the Himalayas, as far as possible from the range of attacking Jap aircraft."

The second operation is the freight shuttle service "over the hump." In this

* Not wholly neglected by *Air Transportation*, however. Witness "Ingots by Air for the Foundries of China," *A.T.*, October, 1943.

Back from the aerial Burma Road over the Himalayas, four of Pan American Airway's CNAC pilots are waiting to fly planes back to the Orient. Captain Julius Petach, Captain Peter Goutiere and Captain Ray Allen are above. Petach, born near McKeesport, Pa., is 27. Goutiere, born in India, is 29, and Allen, whose home is in Bristow, Okla., is 23. The fourth is Harold Chinn (left), educated in Vancouver and now a CNAC veteran.

service, Pan American's CNAC flight crews operate lend-lease aircraft allocated to China and are primarily responsible for transporting lend-lease supplies into the republic. The Army's service has the job of transporting military materiel and equipment for air and ground forces operating in both Burma and China.

"But when the going gets tough, everybody carries anything that has to move," Captain Petach explained. "There is probably no better example on any of the fighting fronts of the close teamwork between the Army and its civilian running mates. We swap spare parts, loan personnel, exchange gadgets—all with the purpose of keeping up our schedule of getting every airplane across 'the hump' every day."

Beginning Was Small

"It used to be awfully tough going before the Army arrived on the job," Captain Gutiere added. "It took us months to get even one plane allocated to China. When we got it there, it was still at the end of a 16,000-mile supply line. Spare parts, leaving factories here and earmarked for us, often had to be highjacked somewhere along that line to help out some urgent military operation traveling in another direction. We were just about out of baling wire and chewing gum cement, when the Army moved in. Now we get the spare parts we need, and, in exchange, we pass on to the Army pilots what we have learned in our two-year battle 'over the hump.' We know that route by heart, all the vagaries of Himalayan weather, and the wily tricks of the Japs to lure us into ambushes, jam our radios, and try to fool us into landing at their fields instead of our own."

Though the captains describe the operation as being "all taped up," meaning well and smoothly organized, flying over the forbidding land of the Himalayas is still "hell for leather."

"The country between India and China is the worst in the world," Captain Petach said. "It is just a mass of hundreds of

miles of unmapped mountains, some of them rising up to 25,000 feet, stabbed with jagged peaks which have never been properly charted. Most of it is blanketed over with thick, black jungle. Most of the peaks are covered with heavy clouds most of the time. The prospect of surviving a forced landing is considerably less than one in a thousand. Once you get up you have to keep going and just hang onto your engines to get through."

"If the terrain sounds bad, the weather is worse," Petach added. "From late October until May the southwest monsoons turn the whole air into a lake. Even the birds walk. The rest of the year the northeast monsoons take over. Although they are not as tough, they have some particular tricks of their own. Every month of the year you can count on ice and crazy inversions of temperature that slip from muggy heat to zero cold in a matter of a few thousand feet or a few minutes."

Add the Japs to that country and that weather and you have a rough idea of what stands in the way of getting supplies into China.

"And don't think the Japs haven't tried to break up that line," Captain Allen cut in. "They bomb our fields in India on one end and in China on the other. From their own fields in Burma they try to intercept us either coming or going. When they are not after us, the course for their bombers has to cross our flight line so we catch it from all sides. When the Japs are in the air we climb farther and farther north where the peaks are at their highest. We do most of our flying in clouds, which is pretty ticklish because those Himalayan clouds are always full of mountains."

But Clouds Are A Boon

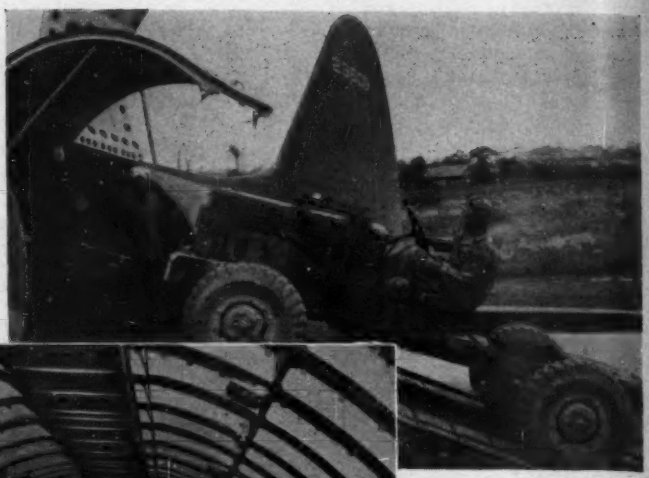
Explaining that they would never be able to get off the ground if it were not for the clouds, Captain Chinn, Canadian-born Chinese veteran of ten years of flying in the Orient, told why CNAC has the reputation of being the only airline in the world that flies *only in bad weather*.

"We had to learn that in a hurry if we wanted to keep on flying—and living—when the Japs moved into China seven years ago. We just picked weather too tough for the Japs to tackle. Those clouds are our best friends, and the bigger they are the better."

"Clouds have saved us more than once," Captain Goutiere affirmed. "Ray here can swear by them. On a recent flight he came out of a cloud bank and found him-

—Pan American Airways Photo

Air Cargo's what-is-it, CNAC's famed Douglas DC-2½. A bastard model by any airman's standard, this is what resulted when a DC-3, similar to the standard U. S. domestic airline plane, lost a right wing, and there was no spare to replace it. But there was a wing designed for the older, smaller DC-2. Pan Am-CNAC ingenuity did the rest—and the strange result flew!



Pvt. Jefferson Partain, AUS, of Elberton, Ga., starts his weapons-carrying truck up the ramp for loading into cargoliner for transport from India to China.

Weapons-carrying truck is almost in plane after being driven up ramp. Scores of trucks today are hauled over the Himalayas in exactly this manner.

self sandwiched in between a layer of Jap bombers on the bottom and Jap Zeros overhead. They all opened up on him at once. Ray and his co-pilot, Dick Chinn, both hauled on the controls. They snapped that big 14-ton Douglas over on its back in a half roll, as if it were a pursuit ship and dived back into the clouds, upside down. They lost them all right, but now Ray is as chary of clear weather as he is of Jap machine guns."

Cargo Goes Through Anyhow

Despite mountains, monsoons, malaria and the constant menace of the Japs, supplies for China are getting through in ever increasing quantities, the four captains enthusiastically reported. When Colonel (now Major General) Claire L. Chennault's "Flying Tigers" and a squadron or two the British could spare made up the only fighting air force in China, American and Chinese captains of CNAC not only operated as the aerial supply line for Chennault's fighting squadrons but also ran supplies high above the old Burma Road from Rangoon into central China. With only a half dozen airplanes, and no prospect of getting others, they set up a flying record which has long since become legend.

At that time Generalissimo Chiang Kai-shek is reported to have said: "Give me 100 DC-3's and the Japs can have the Burma Road." But in those days America had no transports to spare and against the pitifully small ground and air forces of General Joseph Stilwell, the Japs hammered their way through Burma and cut off the last surface supply route into the besieged republic. It was then that CNAC

Somewhere in Assam, the body of a Navy weapons carrier is lifted into a cargo plane. Rest of the truck has already been driven aboard, to be flown 'over the hump' to China.

transferred its operations to the "suicide run" over the Himalayas to forge the lifeline into India. For months supplies reaching China totaled only a few tons. But during December, 1943, the U. S. Government announced, more than 12,000 tons were delivered by air into China.

"That volume is increasing every day," the CNAC Captains reported. "The planes now flying that route make the old Burma Road trucking operation look like a string of wheelbarrows. Recently, the Army added a fleet of big four-engined cargo carriers that can carry twice the load that we could manage with twin-engined transports. But even more important than the size is the way the ships are being flown these days. We fly around the clock, with every plane either flying, loading or unloading, every minute of the 24 hours. Line checks are made on the airplanes while the cargo is going aboard or coming off. They only drop out of service about once a month for complete maintenance overhaul."

How Plane Equals 90 Trucks

The number of planes now in operation "over the hump" is a matter of strictest military secrecy. But the results have been made known in enough detail to substantiate the wisdom of the Generalissimo's remark. Captain Chinn explained it this way:

"One DC-3 carrying 2½ tons making one and a half round-trips, or three crossings, in a day, can deliver as much cargo into China every thirty days, as 90 trucks could deliver over the old Burma Road. Besides, we carry enough gas with us to bring us out again so the load we deliver is net gain. The trucks used to have to lose about 40 per cent of their pay load because they had to carry so much fuel along with them in order to get back to their base. Combined operations 'over the hump' in December landed as much cargo into China as 4,500 trucks carried in any 30-day period over the old road.

"We get every last pound and every mile we can out of the planes," Captain Allen said. "We keep up two and a half crews for every airplane. The engines don't cool down from one trip before the new crew is aboard, the new load is lashed down and we're on our way again. We average 15 round-trips—30 crossings—every 30 days. We all average 108 hours of flying, minimum, a month. While that goes well beyond the hours allowed for ordinary transport flying under CAA regulations here in the United States, Pan American keeps a close medical watch on

Chinese coolies crowd around a newly arrived CNAC plane just landed with a load of supplies after crossing the Himalayas. The mountains in the background hint at the terrain the fliers pass over to keep the aerial Burma Road open.

us, maintains swell living quarters and food and we have not had any casualties from the strain yet. Besides, once you get within range of that firing line you don't want to take time out, even to eat."

These boys fly, and inevitably some of them die, at the hands of the mountains, the weather or Japanese shells. Guarded by their system of Chinese guarding stations, veterans of all the tricks of escape in bad weather flying and among the unmapped, icy peaks of the world's highest mountains, these airmen are particularly proud of their "combat" record. There is no real combat to their flying since the transports are unarmed and, overloaded, easy prey for the Japs. In more than a year and a half of flying 'the hump', however, it was only recently that Pan American had its first transport shot down by the Japs.

Technician 5th Grade Arnold Burkholder, of Plattville, Wis., ties down case of "K" ration for troops over in China. Field rations of this type are flown over to U. S. troops in China in great quantities.

Captain Marshal Schroeder, of Buffalo, New York, a veteran transatlantic and African pilot of Pan American Airways, was just at the crest of 'the hump' when the radio warned him that a Jap Zero was on his tail. For ten year-old minutes he dodged, spun, tried every trick in the bag to lose his attackers. Only once did the ground station reach him. "Too busy now—tell you later," Schroeder replied to the anxious inquiry. Then silence. Buried deep in the jungle of some unmapped mountain, Captain Schroeder and his courageous crew are buried beneath the wreckage of their ship. Whenever CNAC transports reach the last portion reported by Schroeder, a wing is dipped in silent salute.

In the seven years of war, during which they have operated the air transport service for China, Pan American has had five airliners shot down or forced to land by Japanese gunfire.

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IT'S AN Air WORLD

(Trade Mark)

By L. A. GOLDSMITH, *Economic Analyst,* AIR TRANSPORTATION

FROM New Guinea comes a report: A laborious six weeks' trip over mountain and jungle trails by horseback is now easily accomplished by air in 45 minutes. Now whole divisions are moved that way.

Time Marches By on Schedules of Minutes—Not Weeks—Nor Months!

Forty-five minutes are less than one one-thousandth of six weeks. That shows the change in today's world. Infinitely less change has developed in transportation during past *centuries* than during the last few years. From San Francisco to Hawaii, it now takes the Navy only about 11 hours to transport by air 35 persons and 14,000 pounds of vital cargo.

Our Army's Air Transport Command makes thousands and thousands of regular flights, over oceans, deserts and Arctic ice and snow saving immeasurable time for war passengers and for tons of fighting freight. Air transport achievements are on such a vast scale and of such significance that they stagger the imagination. They are demonstrating that time and distance have been overcome as barriers to movement in all directions.

The well-being of people always has advanced in ratio as distances lost their handicaps, and communications became quicker and easier. The long search for the solution culminates in the transport plane: *the airborne are the reborn.*

The foregoing paragraphs are a highlighted digest of a current American Airlines advertisement. It seems to fit completely the significance of this column's outlook on today's air world.

AN Inter-American touch added a note of Good Neighbor cordiality to the National Air Cargo Luncheon held in Detroit Mar. 23.* The luncheon was sponsored by the Detroit Chamber of Commerce and Wayne University, under the Edward S. Evans Grant for Air Cargo Research. It was a history-making event in more ways than one. Tree- and vine-ripened vegetables had been flown to the luncheon from four Caribbean countries and five distant states. The flights covered 12,500 miles or an equivalent of halfway around the world in from 6 to 30 hours (the latter from South America.)

Food Flown to Detroit Presages "Global Eating"

Colonel Evans, who addressed the meeting, stressed what he believed would be the slogan of tomorrow—"Picked yesterday—eaten today." He pointed out that even this achievement in swift transportation is not new. In the days of the Incas, fresh fruits and vegetables picked in the lowlands of Peru, 100 miles from their mountain homes, were brought to the tables of the Inca rulers within 24 hours. No, they didn't have air cargo, but human runners, fleet of foot, accomplished the feat. In this age, air cargo will permit everyone, not just the favored few, to have the chance of obtaining exotic fruits and vegetables from distant lands.

SECRETARY of Agriculture Claude R. Wickard also spoke, foresaw new postwar markets for American farmers through the transportation by air of our own farm products to foreign countries. The Secretary forecast that this development would prove important in providing employment for skilled pilots, aircraft mechanics and other personnel as they come back from the war.

"Air Cargo Merchandising" Will Create New Jobs

"Global eating" was the theme of Miss Eloise Davison, director of the New York *Herald Tribune* Home Institute. She said the Air Age would expand our nation's eating habits, and when the boys came home from war, "their visions will have lengthened and the women cannot be far behind." She predicted a possible future menu to include an exciting vegetable plate, which might include "hearts of palm from the far Pacific, chayotes from Guatemala and, from the United States, carrots for good eyesight in an age when many of us will be driving helicopters and sky-cars."

Apropos all this talk about food produce as air cargo, a food broker told me a year ago that there was no reason why fruits and vegetables could not be shipped economically and

* For a more complete report, see Pages 15 through 26.

profitably by air in the very near future. This merchandiser believes that before shipment of vegetables by air cargo, many of them should be stripped of their pods or shells or heavy outer leaves or skins, to decrease air cargo costs and obviate paying air rates on *waste material* having no destination but the garbage pail.

"F" as in Flying Stands For New Word: *Flightway*

THE transatlantic edition of the London *Daily Mail* reports a new word in the language of air transportation: *Flightway*, coined by the British Air Ministry. It designates a new safety yardstick for airports, and will be developed in the planning of postwar airports. The Ministry declares "the increasing size of airliners makes it necessary to insist on the creation of these flightways, which are to be air spaces of carefully defined dimensions at both ends of a runway." Within them there must be no obstructions to flight.

Five separate types of services, based on probable requirements for the next 10 years are also visioned by the Ministry. One is a transocean service with hops of 3,000 or 4,000 miles. It would be operated with planes weighing 160 tons and using runways 5,000 yards long and 600 yards wide. The *Daily Mail* points out that "these figures make New York's new airport at Idlewild out of date before it starts functioning, as the longest runways for which provision has been made at this airport are 10,000 ft., only two-thirds the length envisaged by the Air Ministry." How about that, New York?

Talking of runways, out on our own West Coast Seattle advertises that this city is building its world airport today "a gigantic 1,000-acre airport with runways more than a mile long." Its international aspect will be underscored when tickets are sold for Alaska, Vladivostok, Shanghai, Manila, Sydney, Moscow and even Paris and London. Seattle believes she is destined to become the focal point of American air traffic to the North Pacific and the Orient—with freight and passengers going forth to all other parts of the globe as well . . . over the top of the world to inland Asia and on to Europe. Nice going, Seattle—more power to you and your plans for postwar Air Transportation!

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Coming: Paradise Of Air-Born Trade Opportunities

New, Sparkling Preview Of the Future of Air Cargo In Inter-American Trade

By J. STANTON ROBBINS
Transportation Section, Office of the Coordinator of Inter-American Affairs

THE American republics are on the threshold of their greatest evolution, the evolution in transportation brought about by the tremendous advances within the last few years in airplane design and construction.

Since the republics of America have enjoyed independence they have faced many problems, one of the most serious of which has been the great lack of adequate transportation and communication between neighboring countries and even inside the same country.

The airplane is the answer to these problems, for the plane makes short work of mountains and forests and crosses deserts, rivers and pathless jungles with equal facility. The plane is now breaking down isolation and sectionalism, giving the peoples of America new unity, and drawing them into a circle of common interest.

While transportation in North America progressed in slow stages from pack-horse to covered wagon, canal-boat, railroad and auto, and finally to airplane, the transition in South America from ox-cart to airplane is being made in one jump. The inhabitants of many communities in tropical America who have never seen a train are quite familiar with the comings and goings of the plane.

And the changes which have thus far taken place are as nothing compared with what one may expect when war-caused shortages of planes and fuel have been overcome.

It has been said that the airplane may give to the American republics what Bolivar and other liberators dreamed of accomplishing but were prevented from doing by lack of communications; closer relations between countries now separated almost solely by the vast trackless distances.

> Until quite recently it took longer to travel by land from Managua, Nicaragua, to San Jose, Costa Rica, only 200 miles apart, than it did to travel by steamer from Costa Rica to New York.
>
> Only five years ago one could travel from Lima, Peru, to Paris in less time and in greater comfort than one could go from Lima to Iquitos, only 745 miles away in an air line.

The hardships of the overland trail between Lima and Iquitos were such that many preferred to get there by ocean steamer, sailing first from Lima to the Panama Canal, then around the northern

end of South America, southward to Belem at the mouth of the Amazon and finally 2,300 miles up the Amazon to Iquitos, a trip of some 8,000 miles requiring at least 30 days. But now that is all changed. Today, planes fly between Lima and Iquitos in a few hours.

With communication problems like this, it is easy to see why neighbors know little of each other and why large areas remain completely isolated, out of touch with the world and without means of marketing their produce.

Poor Transport Hikes Prices

In some of the mountain republics, it is not unusual for the cost of inland transportation to double the price of merchandise sent from abroad. Even before the present war, shipping, handling and insurance charges on a ton of hardware shipped from New York to Bogota, Colombia, were frequently greater than the initial cost of the merchandise.

It is easy to say "Why don't they build railroads?" but anyone who has traveled over the Central Railroad of Peru—or over the 11,000-foot Quindo Pass in Colombia will never ask it.

Peru's Central Railway climbs almost straight up, and, within the first 85 miles of its length, reaches an altitude of nearly 16,000 feet or three miles above sea level. Peru could never have built this costly line were it not for the copper mines at the top.

South America is more than twice the size of the U. S. but in each of the republics, with the possible exception of Argentina and Uruguay, nature has imposed serious physical handicaps to travel. Even

CHICLE TAKES TO THE AIR via a cargoliner of Aerovias of Guatemala, in a country where, as containers show, even yeast and toilet paper travel by plane.

The Author

BORN IN *Vermont and brought up in Connecticut, Mr. Robbins has a distinct New England background. After attending Andover, he was graduated from Yale in 1924. His first venture in the transportation field was the organization of the first "student-third" trip to Europe which marked the transition of the old-time steerage of the transatlantic liners into accommodations for students and other travelers of modest incomes.*

As a travel bureau executive he has traveled by air, train and by motor car throughout Europe, North Africa, South America and the Caribbean area, and recently returned from a survey of transportation routes in the Orinoco and upper Amazon valleys.

He represented the Office of the Coordinator of Inter-American Affairs in Mexico City on the sub-committee of tourism of the Mexican-American Commission of Economic Cooperation.

As special assistant to Nelson Rockefeller, Coordinator of Inter-American Affairs, he has made frequent trips by plane to many republics throughout the Western Hemisphere.

Argentina, which has a common boundary of over 2,000 miles with Chile, has no through railroad connection with this neighbor. In 1934 a long section of the Transandean Railroad was washed out on the Argentine side of the pass, and has not been rebuilt; a highway is now used to bridge the gap.

This railroad and three rather indifferent highways now cross the Andes connecting Chile with Argentina. These highways cross passes, ranging from 10,000 to 12,500 feet above sea level, and are blocked with snow in winter. Only in the extreme southern part of the Andes are the passes lower.

10 Minutes in Air Equal Day

We in the U. S., if we travel, have the choice between a 60-mile-an-hour train and a 200-mile-an-hour plane—18 hours from Chicago to New York by train or 4¾ hours by plane—but down in the Amazon Valley there is no such choice. There they say, "One minute in a plane is equal to one hour on the ground or 10 minutes in a plane is equal to a day's journey." And in many cases this is actually an understatement for, in the rainy season, an ox-cart does well to make 15 miles a day. And the winding, twisting nature of the trails adds greatly to the total mileage.

The distance between Sucre and Camira in Bolivia, for example, is 300 miles by highway but only 135 miles by plane. This particular trip takes only 45 minutes by plane and anywhere from six to twelve days by road, depending on the weather. Engineers say it will take five years to build an adequate, 276-mile highway between Cochabamba and Santa Cruz in Bolivia and the cost will be in the neighborhood of $7,000,000. It takes only a few months, however, to level off two or three landing fields and the cost is nominal. Planes now make this trip with local stops in three hours.

Airports Cheaper than Roads

According to Colombian officials, a first-class landing field with the necessary buildings and installations can be built for the cost of two miles of ordinary, hard surfaced highway. In these lands of vast distances two miles of highway will get you no place at all. For this reason, a Colombian engineer has said it is better to dot the hinterland of Colombia with 25 or 30 strategically placed landing fields than it is to try to connect these communities with the capital with roads. Roads will be built eventually, of course, but he thinks landing fields should come first.

Many mining and rubber gathering enterprises of South and Central America could not operate without planes. The Aramayo Mines in eastern Bolivia, for example, depend on planes for transportation. One can hop from the mine to La Paz in 30 minutes but the trip by trail takes 15 days. These mines, says the manager, could not operate without the planes as the cost of building an adequate road would be more than the mines are worth.

Air vs. Mule Transportation

Traveling through Ecuador from Loja to Cuenca takes five days by trail but only 45 minutes by plane. The distance in an air line is 90 miles and the cost of the plane ticket is less than the mule hire for the overland route.

One can fly from Buenos Aires to Tierra del Fuego in about 15 hours but the same trip by land and by water takes several

THE FABULOUS TACA here gets a load of silver, just one of its unbelievably long list of products regularly transported by cargo planes in Central America.

weeks. It is not surprising therefore, to learn that *South American airlines carried in 1942 six and one-half times as many tons of cargo as did the lines of the U. S.*

In Central America, TACA operates out of 235 small airports or landing fields, and hauls freight to and from isolated mines, chicle camps and other remote centers. Within the last five years TACA has carried 93,000,000 lb. of air cargo. It takes only two hours for the planes to move freight 150 miles from the north coast of Honduras to the capital, but before the planes came it took two weeks. To move chicle from the forest stations to Flores, the gathering center, used to take six days using pack-mules; it now takes 30 minutes by plane for an airline distance of 50 miles.

It is 795 miles by river and railroad from Barranquilla to Bogota, Colombia. Merchandise moving over this route takes from one to five weeks, depending on the state of the river, and sometimes must be loaded and unloaded several times to get around rapids. The airline distance between the two cities is only 450 miles and the flying time is 2½ hours.

Argentine Freight Flies

Argentine merchants are shipping all sorts of commodities by plane. A recent two-ton plane cargo sent from Buenos Aires to Quito contained felt hats, leather goods, optical goods, spectacles, stockings, textiles, pharmaceuticals, seeds and samples of foodstuffs. The cost of this shipment, it is said, was no greater than ocean freight and wartime insurance, and the goods reached their destination in four days instead of 40.

Panagra now operates a freight plane service between Buenos Aires and the Panama Canal. At Balboa shipments are

THE TIN GOOSE STILL FLIES in Colombia: Over 10 years old, this antique looking tri-motored Ford, long since forgotten on U. S. airlines, still does a big job as a freighter, not only in Colombia, but in many other countries.

transferred to Pan American planes to Miami. The distance from Miami to Buenos Aires is 5,300 miles.

Freighting rubber out of the upper Amazon is a third cheaper by air than by the Madeira-Mamora Railroad, according to Joao Alberto lins de Barris, Brazil's Coordinator of Economy. He also says capital at the present time should be invested in air lines rather than in interior railroads.

General Salinas, Mexico's chief of civilian aeronautics, says: "In Mexico air transportation is in many cases cheaper than pack-mule transportation and great quantities of coffee, chicle and ore concentrates are now shipped speedily by air from otherwise inaccessible areas."

Beef Is Prospective Cargo Item

The Tarapato Valley in Peru's Department of San Martin is famous for its fine tobacco but, due to absence of highways, they have had to bring the tobacco bales to the coast on mule-back. This tobacco is now shipped by plane and it is not exposed to the weather.

Argentine ranchers around Salta would like to ship fresh beef by plane to Antofagasta, Chile. Their line distance between the two is 330 miles. They could do this profitably if planes were available. Live cattle are now driven across the desert and the 12,000-foot Socompa Pass of the Andes to reach Antofagasta.

As the seasons in Argentina are the reverse of those in the U. S., seed men in North America now save a full year by harvesting a crop of seed in September, shipping it to the Argentine by plane, where September is spring, planting, and harvesting a new crop of seed in February, which is flown back to the United States, reaching here in time for early spring planting.

Hundreds of other trade possibilities exist throughout the American republics and are only awaiting the time that planes, plane fuel and other equipment become available. Where a large and constant volume of shipping is offered on a two-way movement and where planes of large capacity specially designed for freight movement are used, it has been variously estimated that air freight could be profitably handled at from 15 to 25 cents a ton-mile. This does not mean that there will be fewer shipments by steamer or by train or that railroads or highways will cease to be built. There will be more railroads and more highways in South and Central America. The planes will only supplement the ships and the railroads and will never carry more than a fair percentage of the total inter-American commerce.

But that small tonnage is the leaven

of the entire mass—a special machine, a spare part or a much needed chemical sent by plane may often keep a whole factory or an entire industry from closing.

Edward Warner, of the U. S. Civil Aeronautics Board, reports that the average plane in the transatlantic ferry service is now carrying 12,000 lb., while 3,000 tons of cargo a week is now crossing the Atlantic by plane *at an average cost of 20 cents per ton-mile.*

According to a statement by CAB, within three years transoceanic and international air passenger traffic under the American flag is expected to increase six times and mail and express at least eight times the figures obtaining in April 1942.

Aviation authorities expect to put into effect a schedule of 26 hours between New York and Buenos Aires soon after peace is restored and night flying can be effected with properly lighted courses. Other schedules would be shortened in proportion.

Our modern world is one hundred times smaller than the world of Christopher Columbus and, on the basis of increased speed of planes, only half as large as it was even in 1938. Today, we are told, no point in the world is more than 60 hours from New York. Small wonder that the Americas are taking to wings!

TCAL Sets Air Record

New York was just an hour and a half away from Toronto recently. That was the new record set by Trans-Canada Air Lines, assisted by favorable weather and tailwinds. Carrying 10 passengers, mail and express, the aircraft covered the 365 air miles in one hour, 28 minutes. Two hours is the scheduled nonstop time. A train takes 12 hours.

New Ports in West Indies

Recent reports indicate large activity in the direction of airport construction in both British and Dutch West Indies.

The 1944 Trinidad budget calls for an airdrome at Laventille to cost more than $1,000,000.

Recently opened is a new airport just completed in Aruba, N.W.I.

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WORLD'S OLDEST OPERATING TRANSPORTATION AIRLINE

Illinois Looks to Air Future As Affecting Every Branch Of Learning and Instruction

Midwest's Great University Planning Vast Expansion of Air Transportation Courses Around Its Own New Airport

By JOSEPH F. WRIGHT
Director of Public Information, University of Illinois

TO meet the needs of an aviation-minded post-war world, the University of Illinois is planning a program of education and research which will touch almost every part of the institution, cutting across traditional bounds of educational fields. Led by President Arthur Cutts Willard, an internationally known engineer, the university has already intensively studied the problems and opportunities which aviation is bringing to higher education.

As a laboratory and hub for its aeronautical instruction and research activities, the University has purchased 730 acres of land to construct a Class IV airport. Additional acreage is planned as needed. An initial sum of $1,350,000 is available for land, grading, runways, lighting, and buildings. Of this, three-quarters of a million dollars was appropriated by the State Legislature, and the balance has been granted by the Civil Aeronautics Administration.

Contracts will be awarded by the CAA as soon as it can complete its plans and ask for bids. Initial construction will include three 5,300-foot paved runways each 150 feet wide. Initial construction will include a control tower, administration building, hangar, shops, and classroom space.

The airport is strategically located five miles southwest of the University campus at Urbana-Champaign, 128 miles south of Chicago, 94 miles east of Springfield, 170 miles northeast of St. Louis, and 125 miles west of Indianapolis.

The field, of course, will be built to CAA and Army standards and will be open for military and commercial use as soon as possible. After the war, it will continue operating for commercial and civilian flying as well as a laboratory for educational and research activities of the university.

President Willard has pointed out that "the situation confronting planners for the future of domestic aviation is without a parallel in the history of education and indeed of civilization. No other industry ever has made such broad demands on so many fields of human knowledge.

"These demands range from astronomy and physiology to sociology and zoology; from medicine to engineering; from agriculture to commerce; from law to business management; and include nearly all sciences.

"A comprehensive program in higher education related to aviation must be designed to utilize as many existing university departments as possible. The general purpose should be to provide an educational center at both the undergraduate and graduate levels where students may study in any or all fields of knowledge related to air transportation."

The airport at the University of Illinois will be the center of activities reaching

into every college and department, involving not only the units at Urbana-Champaign, but also the colleges of medicine, dentistry, and pharmacy, and associated hospitals and institutes in Chicago.

Research in aeronautical medicine already is in progress on the Chicago campus to study the effect of temperature, humidity, and diet upon the human body. At Urbana-Champaign, in addition to the colleges of engineering and agriculture, interest in aviation problems is being shown by the colleges of law and of fine and applied arts.

Foreign Lands To Be Studied

In the field of the liberal arts and sciences, President Willard has pointed out the effect of aviation in that the University "must accept a broader responsibility for educating its students about foreign people and countries, about their languages, customs, cultures, ideas, and ambitions. Unless such knowledge is made available to our future citizens more effectively and completely than in the past," he says, "American aviation may lead the world in aviation technology but fail to take its proper place in world commerce and in the society of nations. The airplane is the most important and powerful agency ever devised by the mind and skill of man either to destroy or unify the civilization of the future."

President Willard has listed seven broad objectives for the University of Illinois in relation to aviation:

"1. To serve the industry by providing education for such college trained personnel as are needed in the design, construction, and production of all types of planes and engines; in the whole field of commercial air transportation for both foreign and domestic service; and in airport design, construction, operation, and maintenance.

"2. To develop research personnel for private, commercial, government and university laboratories.

"3. To provide teacher-training programs for high school teachers, both specialists who teach aviation courses and non-specialists who teach high school courses related to aviation.

"4. To develop and direct off-campus educational programs for technical or industrial personnel and teachers, and for adults interested in the social, economic, and political implications of aviation.

"5. To provide short courses on the campus to educate university graduates in the newest developments and needs of aviation, and to keep them abreast of changing needs and knowledge.

"6. To provide flight instruction for limited numbers of properly qualified students under sponsorship of the CAA or the Reserve Officers' Training Corps.

"7. To develop in cooperation with the aviation industry, the CAA, the Army and Navy Air Forces, and with other interested national agencies, cooperative research programs related to air transportation."

While there is great enthusiasm for aviation in young people coming to the universities from high schools, and will be among the many coming to the campus from the armed services after the war, the University of Illinois is planning to temper this enthusiasm with facts. The need for service workers in aviation and related lines—airports, salesmen, etc.—will be great. The need for engineers and persons trained in business will be great, and this training will be a fundamental for the specialists in aviation whose numbers will be comparatively small.

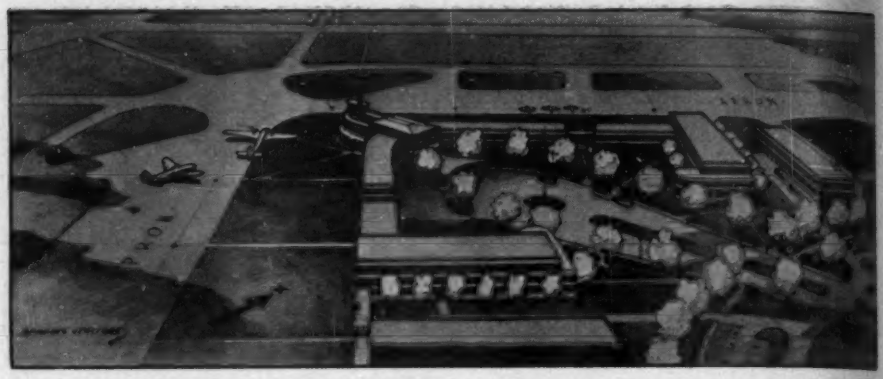
Aeronautical aspects of instruction at the undergraduate level in the University will probably be carried on by adding aeronautical options into present curricula taught in various colleges and schools and adding courses in existing departments.

Even Law College Included

The college of law will be interested in the legal aspects of aviation, pointing them out where they apply in present courses, and may add special courses if necessary. The college of commerce and business administration is interested in the administration of air-borne commerce and operation of airports.

Special degrees in aeronautics may be conferred for advanced work. Authorities point out that, in the field of engineering for example, 10 engineers in basic subjects will probably be needed by the industry to one specialized aeronautical engineer. Among the activities for which the specialists will be trained is that of research.

Students at the University of Illinois



Future Illini undergrads may be able to look forward to air education at a base like this, visualized as ultimate status of University airport.

will have the benefit of the institution's 75 years of experience in teaching and research, of its plant valued at $44,000,000, and of a staff of 2,300 persons with experience in every field. For cooperative research studies, they will have the benefit of the University's experience with such programs which have continued for more than a quarter of a century.

Some of the oldest of these projects are in the fields of rail and of highway transportation. In keeping with the state's position as the center of the nation's railway and highway networks, the university's engineers have done intensive work in these fields. The establishment of the airport and aeronautics program will extend the university's work into the air in keeping with the State's central location on the Nation's airways.

Among aviation research projects which are being considered at Illinois:

Studies of site selection as affected by grading, drainage, obstacle hazards, and future expansion possibilities.

Studies to determine the most practicable turfing for small landing strips and small airports.

Studies relating to the most effective methods for handling and transshipping cargo with minimum damage and loss of time.

Air transportation of foods and perishable cargoes, include vine-ripened or tree-ripened fruits, quick-frozen foods, etc.

Aviation medicine, including studies of the effects of oxygen deficiency, pressure changes, and temperature changes in air transportation upon passengers not in perfect health.

Problems of parking arrangements for passenger and cargo handling.

Problems of general business and management operations involved in aviation.

State and Federal laws affecting air transportation.

Another activity for which it is hoped the University of Illinois airport may be used is a postwar ROTC air force unit.

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AIR-TORTATION NEWS

REG. U. S. PAT. OFF.

Northwest Airlines Seeks Four New Routes From Chicago to Alaska

Northwest Airlines has asked the CAB for authority to establish four air routes between Chicago and Nome and Anchorage, Alaska.

In an amended application, the airline proposed to extend service on its previously-applied-for Chicago-Fairbanks route to Nome, via Minneapolis-St. Paul and Fargo, N. D. Filing of the applications follows completion in early March of final hearings before CAB on Northwest's proposed New York extension at which the practical need for a midwest gateway to Alaska was stressed by witnesses and in statistical exhibits placed before the board.

Croil Hunter, NWA president, pointed out that the company first filed for a route to Alaska approximately a year before U. S. entry into the war, emphasizing the now confirmed importance of such a route to the military defense of the continent and its importance in the development of the Alaskan territory.

The amended application provides for these additional routes:

1. Chicago to Anchorage, via Milwaukee, Duluth, Winnipeg, McMurray, Alberta; Norman Wells, Northwest Territory; Fort Yukon and Fairbanks.

2. Chicago to Anchorage, via Milwaukee, Duluth, Winnipeg, Edmonton, Alberta; Whitehorse, Yukon Territory, and Gulcana, Alaska.

3. Chicago to Anchorage, via Minneapolis-St. Paul, Fargo, Edmonton, Whitehorse, Northway, Alaska, and Gulcana.

"The world has brought out clearly the fact that Alaska holds one of the most strategically important positions in the entire world," Mr. Hunter explained. "It guards the continent from the west and it is going to be one of the chief centers through which traffic from our country to the new Oriental markets will be funneled.

"Establishment of such routes as we have asked for, in addition to the proposed NWA Seattle-New York route, would give the entire group of northern states a close link with the new Alaskan empire."

NWA engineers already have surveyed the territory through which the new routes would proceed and NWA pilots have pioneered flying along similar U. S.-Canada-Alaska routes as pilots of the military cargo planes for the Air Transport Command.

Northwest also has asked permission to fly to Anchorage and Nome from its western terminus at Seattle.

THE FIRST LADY COLLECTS the first book of Pan American Airways' new "world air currency" from Pan Am Vice President & General Traffic Manager V. E. Chenea. The new "Clipper air cheques" are for use by international air travelers during in-transit stops, being convertible into local currency of any country reached by PAA. Travelers stand to save handsomely both time and exchange.

Kaiser Has Less To Say As Time Goes On

Asked by AIR TRANSPORTATION to comment on the New York *Herald Tribune's* report that his partner, Howard Hughes, had offered to bet a cool $500,000 that the great new Kaiser-Hughes cargoplane would fly in 1944 [AIR TRANSPORTATION, *February, 1944*], Henry J. Kaiser last month had no comment.

He is, he declared, "not in a position to release any information."

CPAL PILOTS HONORED: For their feats in the finding and rescue of 27 U. S. Army Air Forces personnel in the wilds of Central Quebec a year ago, four civilian airmen of Canadian Pacific Air Lines were signally honored at Dorval Airport when they were presented with the U. S. Air Medal by Ambassador to Canada Ray Atherton, with high-ranking RAF and USAAF personnel in attendance. Photo shows, left to right, Pilots Peter Midlige, Rimouski; Norman Crewe, Montreal; Capt. Ray Roy, Rimouski; and Capt. Norman Forrester, with Ambassador Atherton, Colonel Orlady, USAAF, Lieut. J. Baxter, USAAF, Air Vice-Marshal R. L. G. Marix, head of the RAF Transport Command; Air Commodore G. W. Powell, RAFTC, and L. B. Unwin, president of Canadian Pacific Air Lines.

Parker & Co. Admits Two New Partners On 20th Anniversary

Parker & Co., aviation insurance specialists, celebrated its 20th birthday last month with the admission of two new partners, R. Leslie Cizek, manager of its New York office, and J. Roy W. Barrette, Philadelphia manager.

R. Leslie Cizek *J. R. W. Barrette*

Parker pioneering in air insurance began even before 1924, when the firm was established. Already Founder J. Brooks B. Parker had spent five years as an individual in the field, organizing what eventually became one of the major U. S. air insurance pools.

New Partner Barrette joined Parker & Co. in 1928 as a transportation specialist with a broad background in the ship field, while Partner Cizek, with Parker since 1929, came from the Travelers Insurance Co.

Indemnity Co. Announces New Air Travel Policies

The Indemnity Insurance Co. of North America has announced that it will write foreign travel accident insurance on all travel abroad, regardless of the method of transportation. Protection will be obtainable for even such hazards as traveling by submarine, bomber, tanker or flying over enemy territory.

The company will sell aviation accident insurance on passengers, pilots, instructors and students flying in all types of planes and on commercial airlines in the U. S. and Canada and on Pan American Airways to South America. Policies will be written on an annual premium basis in larger amounts than previously available from pools or groups.

10,000 Parachutes Flown From Wyo. to New Guinea In Less Than Five Days

Ten thousand parachutes needed to drop supplies and ammunition were missing five days before paratroopers were to land behind Jap lines in the New Guinea campaign.

Located by cablegram half a world away on a freight train in Cheyenne, Wyo., the chutes nevertheless reached New Guinea in time. This incident in the famous Markham valley operation in which Douglas C-47 and C-53 *Skytrains* dropped paratroopers behind smoke screens laid by A-20 bombers was told recently for the first time by Maj. David C. Barrow.

When the absence of the parachutes was discovered, a frantic cable was sent to the Air Transport Command's Pacific headquarters.

"We found the chutes had been shipped by rail from Atlanta a few days previously," Major Barrow said. "We finally located the train at Cheyenne, and had the three carloads of parachutes shunted onto a siding.

"Immediately some C-47's were dispatched to Wyoming, and the chutes were loaded on the planes that night and flown back here with all possible speed. The loads were quickly transferred to the *Skymasters* and other planes and routed overseas."

The vital cargo arrived in New Guinea exactly three days after they left Pacific headquarters, he said, and less than five days after the urgent message from Australia had been received.

Ga. Air Service Changes Name, Plans Expansion

An expended program of permanent postwar airport operation, flight instruction, aircraft sales and service and air transportation has been revealed in the announcement of the change of name of Georgia Air Service, Inc. to Southeastern Air Service, Inc.

The company today is a flight contractor to the Army Air Forces with schools in Bennettsville, S. C., and Jackson, Tenn. Postwar plans will make available to commercial and private flyers SEAS' backlog of several hundred thousand hours of war flying experience plus the services of 200 pilots holding commercial and instructor ratings and as many skilled mechanics.

The new name also identifies the relationship of an affiliated company, Southeastern Air Express, Inc., which has an application pending before CAB for feeder-line passenger, mail and freight routes in eight southern states.

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***FOR MORE ACCURATE FLYING**—Mary Kling, technician, makes accuracy tests of the Gyro Flux Gate Compass, the second new compass invented in 4500 years, at the Philadelphia division of Bendix Aviation Corporation. This remarkable compass, called the master rather than the servant of the earth's magnetic field, uses the magnetic field enveloping the earth to develop minute electrical impulses which are amplified to turn the compass indicator. No correction is needed, and the compass is "quicker" than any previous model.*

Fairchild Unveils New Process to Aid Planes' Speed, Climb, Range

A new and revolutionary scientific development that should enable American warplanes to fly farther, faster and higher was announced last month by J. Carlton Ward Jr., president of the Fairchild Engine & Airplane Corp.

Speaking of a "hitherto impossible" technique for chemically bonding pure aluminum to steel perfected by Marshall G. Whitfield and Victor Sheshunoff, research engineers associated with Al-Fin Corp., Fairchild subsidiary, Ward said that "the existence of the Al-Fin process has been a military secret for many months, but now it can be told that it has been used in the production of our aircraft engines for more than a year."

Most noteworthy application of Al-Fin has been in connection with the construction of 12-cylinder Ranger engines, Ward indicated.

"It makes possible marked reduction in the structural weight of an aircooled engine and greatly improves the cooling efficiency of its cylinders. This means that airplanes thus powered can have one or a combination of several advantages. They can carry greater bomb loads, or heavier armor, or more armament and ammunition. They can lift more gasoline and so increase their range. Their speed and their maneuverability can be stepped up."

Ranger 12's with Al-Fin cylinder barrels now produce more horsepower per pound of weight than any other comparable aircraft engine, he declared. Essentially the process is a means of permanently bonding pure aluminum and steel into an integral whole. Pure aluminum cooling fins, being light in weight and excellent conductors of heat, can better dissipate intense heat generated in the cylinder than the more common steel or shrunk on aluminum-alloy fins.

SMU Joins Colleges Now Offering Courses In Air Transportation

An accredited course in air transportation was introduced at Dallas College of Southern Methodist University, beginning Feb. 7. In announcing the new course, Dr. G. O. Clough, director, declared that "air commerce is bound to have such a far reaching effect on the economy of the nation and of the world that a knowledge of the fundamentals of the medium is a logical study for advanced students."

E. H. Pickering

E. H. Pickering, recently a special consultant on air cargo with Headquarters, Army Air Forces, Washington, will conduct the course. Pickering is now with the Guiberson Corp. in Dallas. He has been connected with aviation since 1930, being a former vice president of Texas Air Freights, Inc., and having served with American Airlines, Pennsylvania-Central Airlines, North American Aviation, Inc., and Southern Aircraft Corp.

The course will include the background and economics of air transportation, airline organization, work of the military air transport services, postwar possibilities of the airlines.

Boston Bank Exhibits Air Mail Letter Sent By Benjamin Franklin in 1785

Recently added to the aviation collection of the State Street Trust Co., Boston, is a photo of a letter written by Benjamin Franklin's son, William, in London, to his son, William Temple Franklin, who was staying with the famed Benjamin in France at the time.

Carried by Dr. Jeffries of Boston Jan. 7, 1785, when he and the noted French aeronaut, Jean Pierre Blanchard, made the pioneer crossing of the English Channel by balloon, the photo was obtained through the American Philosophical Society of Philadelphia as an addition to the collection which already contains pictures of Dr. Jeffries, the balloon and the monument erected to mark the landing spot in France.

The State Street bank's collection has long been renowned as one of the finest of its kind in the U. S.

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***NEW YORKERS DEBATE AIR FUTURE:** The new Aviation Section of the New York Board of Trade last month held the first of a new series of open forums. Participants included (left to right): John F. Budd, Air Transportation's publisher, who is also the Aviation Section's chairman; Walter J. Mercer, vice president, New York Customs Brokers Assn. and Hudson Shipping Co.; Dan Ecker, Aviation Section secretary-treasurer; Fred Bennett, of M. J. Corbett & Co., president, New York Freight Forwarders & Brokers Assn.; Sylvester J. Maddock, vice president, Robin Line; Harry K. Barr, president, Barr Shipping Co. and Steamship Freight Brokers Assn.; Walter P. Hedden, port development director, Port of New York Authority; Joseph T. Wilson, world trade manager, International Business Machines Corp., and member of the Section's executive board.*

Waco's Big New Glider Carries Bigger Payload Than Douglas DC-3

Fifteen-man gliders are commonplace now both in the Army and to readers of AIR TRANSPORTATION [*February, 1943*]. But today, the 15-place Waco CG-4A has to take second place beside Waco's latest product, the mighty CG-13. [*See A. T.'s cover, March, 1944.*]

The new gliders, most details of which are still super-secret, have a load capacity, according to Waco, greater than that of the Douglas DC-3, long standard 21-passeinger plane used by most U. S. airlines and famous as the workhorse of the Army's Air Transport Command under the designation of C-47 or Skytrain. Another indication of its size lies in Waco's announcement that it will carry "rolling mechanized equipment" as well as general cargo and personnel.

Like its predecessor, the CG-13 is built with a welded steel-tube fuselage, covered with fabric, and with wings of built-up wood structures covered with plywood and fabric. It's being made under Waco license by both Northwestern Aeronautical Corp. and Ford Motor Co.

Lloyd's Cuts Rates For Air Passengers; Seen as Good Omen

George J. Stewart, president of Stewart, Smith (Canada) Ltd., Montreal, recently announced from London that his firm has negotiated an agreement at Lloyd's making it possible to offer at greatly lower rates personal accident travel insurance from North America to Great Britain, Africa, India, China, Siberia and the Southwest Pacific.

The risks which Lloyd's Underwriters take are so closely tied to the war effort that when rates are reduced on war risks such as on passengers flying to a theater of war, the man on the street can be sure the battle is going the right way.

Stewart, Smith last year undertook contracts with all the Canadian air lines increasing limits of insurance on passengers 300 per cent. It cites the point that for a premium of $14, Lloyd's will undertake a risk of $280,000 on passengers flying from Calgary to Vancouver—a flight involving two takeoffs, two landings and crossing the largest range of mountains in North America.

To observe the possibility of combination airmail and express pickup with passenger service, James J. Strebig, Associated Press aviation editor, and Edward E. Slattery Jr., Civil Aeronautics Board information chief, recently flew over two of All American Aviation's scheduled Air Pickup routes. Strebig expressed the opinion that "this is a practical way to link the nation's Main Street communities for air travelers just as, since 1939, 117 towns and cities in six states have been linked for mail." Pictured are Harry R. Stringer, vice president of All American; Strebig and Slattery.

Parks Air College Librarian Compiles Air Reference Index

Originally to serve the college's own needs and later on to supply an increasing demand from others who found it useful, Willard Kelso Dennis, librarian of Parks Air College, East St. Louis, Ill., is compiling a continuous index of articles on air transportation and related subjects as they appear in AIR TRANSPORTATION and other shipping and aviation publications.

Latest issue covers the whole year 1943 and runs to 152 mimeographed pages, indexing all publications which it covers by subjects, from Accessories to X-Ray Diffraction. It all started, according to Librarian Dennis, because no previously published index of periodical literature seemed to be adequate for Parks College's use.

Readers of AIR TRANSPORTATION interested in obtaining copies for their use or in receiving later issues are asked to write the Editors.

Dr. John H. Frederick Sees Air Cargo Rates Down To 5 Cents a Ton-Mile

Air cargo rates may eventually fall to as low as five cents per ton-mile, Dr. John H. Frederick, professor of transportation, University of Texas, indicates in a series of articles in *Printers' Ink.*

"Within five years it is confidently expected that cargo rates will be down to about 20 cents per ton-mile," declares the professor. "Soon thereafter they should reach about 13 cents per ton-mile.

"Indications are that when air cargo rates reach somewhere around five cents per ton-mile, the rail express and motor truck traffic, or 75.9 per cent of the total less-carload freight carried by all types of carriers in 1939, will become available for air transport at least from a rate standpoint, unless ground carrier rates decline considerably in the meantime. With only a small additional decline in ton-mile rates, to around 4.25 cents, all the freight forwarder (high-class less-carload) traffic and much of the regular less-carload railroad freight will also become susceptible to air transportation.

"There is, however," he hedges, "little that points to an air cargo rate much below 20 cents per ton-mile for at least five or six years after the close of the war. One simple way to reduce costs immediately would be for CAB to lower its requirements for power on takeoff loads. Many in the business say this could be done without materially lowering safety minimums.

"If and when air cargo rates can be reduced to 15 cents per ton-mile, or less," he continued, "the revolutionary effects of air transportation will begin to be felt in marketing with the complete reorganization of many marketing systems.

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Regional air express managers of Railway Express Agency confer on recent cargo trends with P. H. Cummings (center), REA air traffic executive. Others are V. R. Grimsley, Southern Departments, Atlanta; E. L. Head, Central Departments, Chicago; R. W. Starkey, Eastern Departments New York; M. G. Lickteig Western Departments, San Francisco.

PAA Inaugurates New Ticket Refund Plan

To give international air travelers better service, Pan American Airways has announced a simplified refund handling system.

To avoid delays in refunds to passengers on unused portions of tickets and to reduce routing procedure on refund applications to a minimum, the new forms now being introduced combine simplification with provision for nearly all possible contingencies connected with refunding procedure.

Refund applications will, as in the past, be prepared at the point of interruption of passenger's journey but forms can now be forwarded directly to the proper accounting office rather than via central reservations control offices and division traffic managers.

In addition, any Pan American Airways System ticket office in the continental U. S. is now authorized to refund a wholly or partially unused Pan American Airways ticket or order drawn on Pan American Airways or any other line if it has been issued in U. S. currency by itself or any other Pan American Airways ticket office in the U. S. or U. S. territory provided proper procedures are observed. The previously-applicable 30-day restrictions on such refunds is now eliminated.

New-type tickets containing a refund coupon will be ready shortly. These will further simplify refund procedure. Old refund forms, now discarded, are to be turned in to aid the national scrap paper drive.

PAA Doubles Service To Puerto Rico, Trinidad

Local service between San Juan, Puerto Rico, and Port of Spain, Trinidad, by Pan American Airways was doubled March 26.

Previous weekly service in each direction serving strategic Puerto Rico, the Virgin Islands, British West Indies, Guadeloupe, Martinique, and Trinidad will on that date be increased to a twice-weekly frequency, utilizing an S-43-type *Clipper*.

New schedules will be operated southbound on Sundays and Wednesdays and northbound on Tuesdays and Thursdays. On Mondays the same plane will continue on to Georgetown, British Guiana, making a round trip

Port of Spain-Georgetown-Port of Spain every Monday.

These flights are in addition to daily through service in both directions between Miami and Buenos Aires, serving both San Juan and Port of Spain, a weekly all-cargo and mail flight also serving these points (and extending as far south as Belem, Brazil) and a weekly round trip between Miami and Georgetown, B.G., which stops at San Juan and Port of Spain both outbound and inbound.

PCAL Cargo Doubles

Statistics reflecting outstanding utilization of curtailed wartime equipment are revealed in Pennsylvania-Central Airlines figures for January: Revenue-plane-miles up 46 per cent over January, 1943, with passengers carried advancing 83 per cent, mail 53 per cent, and express 97 per cent. Cargo poundage totalled 341,382 as compared with 173,286 in January, 1943.

The report of H. J. Symington, president of Trans-Canada Air Lines, covering 1943 TCAL operations, shows a large increase in traffic carried and in operating revenues. In 1943 the number of passengers increased by 34 per cent, air cargo volume by 126 per cent and air mail by 61 per cent, as compared with 1942.

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AIR EXPRESS

New Railway Express Agency poster keynotes REA's campaign to get users of air express to ship earlier in the day to avoid the day's-end rush.

TO William Littlewood, vice president in charge of engineering for American Airlines, on his appointment by President Roosevelt to the National Advisory Committee for Aeronautics.

William Littlewood

Littlewood will serve a five-year term on the Committee, which acts in an advisory capacity to the President and Cabinet on aviation development. He is the first airline executive ever appointed to NACA.

Littlewood joined American Airways, predecessor company of American Airlines, Inc., in 1930, was made chief engineer in 1933, and engineering vice president in 1937. In 1935 he was awarded the Wright Brothers award presented annually by the Society of Automotive Engineers for the "Most outstanding contribution to aviation." He is a Fellow of the Institute of the Aeronautical Sciences and an active member of the Society of Automotive Engineers.

TO Floyd M. Williams, formerly with Post-office Department, on his appointment to the cargo traffic department of American Airlines as general superintendent of air mail traffic. Williams will be assistant to Melvin D. Miller, AA's cargo traffic manager.

TO Edward J. O'Brien appointed district traffic manager at Phoenix for Transcontinental & Western Air, Inc. He replaces J. P. Stuart, resigned.

AGAIN to William A. Patterson, president of United Air Lines, who this time has been elected a director of Stewart-Warner Corp.

TO John D. MacArthur, new district traffic manager for Continental Air Lines at El Paso. MacArthur replaces Seale E. Fuller, who entered the armed services Mar. 20.

TO Frederick P. Culbert, recently resigned American vice-consul at Casablanca and longtime French representative for United Aircraft Corp., on becoming general manager of Al-Fin Corp., wholly owned subsidiary of Fairchild Engine & Airplane Corp.

F. P. Culbert

Graduate of the Naval Academy, Culbert has been identified with aviation since 1917, when he became chief pilot at the Navy's lighter-than-air school at Akron. At the 1918 Armistice he was commanding officer of the largest operating U. S. Naval Air Station abroad. Recipient of the Navy Distinguished Service Cross and the Legion of Honor, Culbert held French and Italian aviator's licenses in addition to his U. S. Naval license. He was assistant naval attache at the U. S. Embassy in Berlin in 1920-22.

From 1929 until 1926 he directed many European operations for Radio Corp. of America, first as managing director of RCA Photophone Ltd., and later as European manager for RCA-Victor, RCA-Radiotron and RCA Manufacturing Co. In 1933 he became European manager for RCA itself. In 1936 he left RCA and joined United Aircraft Exports Corporation with headquarters in Paris and remained with United's European sales activities until the German occupation of France. In 1941 he became vice consul at Dakar, and later vice consul at Casablanca.

TO Thomas H. Reid, veteran Pan American Airways employe, on his promotion from shop superintendent to the newly created post of maintenance superintendent. Taking over Reid's former assignment will be C. E. (Jack) Shealer, another veteran in aviation, who served as shop superintendent at Brownsville, Tex. In his duties Reid will be responsible for the mechanical maintenance of the 42-ton *Clippers* at the foreign bases of the Atlantic Division maintained in North America, Europe, Africa and South America, as well as at the New York terminal.

TO Major Alexander P. de Seversky, prominent aviation authority, "super-airman, scientist, soldier, sportsman—seeing when others are blind, speaking when others are silent, acting when others hesitate," as he was

termed by Hamilton Holt, president of Rollins College, on Feb. 21 when President Holt conferred on him the honorary degree of Doctor of Science.

TO Captain Dagoberto Godoy of the Chilean Air Force, first flyer to conquer the Andes, who was honored by Pan American-Grace Airways on the 25th anniversary of his flight during ceremonies marking Aviation Day in Chile, held at El Bosque, military airport at Santiago, in December. Guy de Moras of Panagra presented Captain Godoy with a wrist watch bearing an inscription which signalized the historic flight.

On December 12, 1918, Captain Godoy, then a young lieutenant, climbed into a one-seater, 110-horsepower Bristol monoplane at dawn at El Bosque and blazed the air trail over the mighty Andes to Lagunillas, near Mendoza in Argentina.

TO Leslie G. Brown, new assistant to the president in charge of operations of Braniff Airways.

Brown returns to Braniff after serving as a Captain in the Air Transport Command since August 1942. He was attached to ATC's operations and supply division of the domestic transportation division.

Leslie G. Brown

He left Braniff as chief disbursement accountant. His new duties under Vice President R. C. Schrader will be to co-ordinate flight operations, ground operations maintenance, purchasing, operation engineering, military cargo operations and department personnel, in the operations division.

To Pan American Airways' New Pacific-Alaska Division Manager L. C. Reynolds **[Air Transportation, *February*].**

TO Russell H. Potter, new national promotion manager for American Airlines, Inc. Prior to his appointment, Potter was acting director of the Office of Price Administration in New York State.

Russell Potter

Potter is a native of Buffalo, but his education and business experience lie mainly in New England. Graduate of Dartmouth, he served nine months on the Mexican border with the First New York Cavalry, and for twenty-two months with the AEF in France, where he became a first lieutenant. Later he worked for Bell Telephone and Nash Motors.

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TO W. G. Gabehart, superintendent of stations for Chicago & Southern, who succeeds E. Skinner of Eastern Air Lines as chairman of the Express Traffic Committee, working organization between the domestic airlines and the express agency. He was vice chairman during 1943.

TO A. Chester Beatty, Jr., of London, England, who has been elected a director of Air Express International Agency, Inc., according to announcement by Chester M. Mayer, president.

The new director is a prominent figure in financial and mining circles in England and Africa and well known in the U. S. AEIA serves Pan American Airways, TACA and other airlines and shipping interests as clearance agents, with offices in New York, Miami and New Orleans, and is general agent for KLM Royal Dutch Airlines in Miami.

TO Ira Stuart Wilson, New York financial and accounting executive, who has been elected vice president in charge of finance of Aircraft Accessories Corporation.

Ira S. Wilson

Wilson formerly was vice president of finance and accounts for Fleetwings, Inc., of Bristol, Pa., and has served as an executive of such other manufacturing organizations as Sidney Blumenthal & Co., New York, and Dorman Mills, Parsons, W. Va. In 1936 and 1937 as a member of McKinsey, Wellington & Co., management engineers, Wilson took a leading part in the revamping of the financial and accounting procedures of United States Steel Corp.

Wilson will maintain headquarters at the electronics division of Aircraft Accessories Corporation in Kansas City, Kans.

TO Lieut. Col. H. R. Van Liew, recently cited for his work of flying cargo to Armed Forces in the Solomon Islands.

Van Liew, a United Air Lines pilot from 1933 until February, 1942, when he joined the air arm of the Marine Corps, was cited by Admiral W. F. Halsey: "For skillful and effective performance of duty as pilot of a transport plane . . . Lt. Col. Van Liew successfully completed a cargo-dropping mission, delivering over eight tons of vital military cargo to our ground forces in the New Georgia area, in the face of heavy anti-aircraft fire, continuously directed at his plane. During six runs over the dropping point, he showed not only complete disregard for his personal safety, but a high degree of courage."

TO William G. Jackson on his appointment as division manager of Stewart Smith (Canada), Limited. Jackson will take full charge of air travel insurance for Stewart, Smith.

Wm. G. Jackson

TO Walter A. Vane, flight superintendent at Edmonton, Alberta, on the Northwest Airlines military cargo air route to Alaska [AIR TRANSPORTATION, *February*] for the last two years just named chief meteorologist for NWA's eastern region at Minneapolis.

Transfer of two Northwest Airlines station managers to new positions at Minneapolis-St. Paul and Fargo is announced. S. N. Gulick, station manager at Fargo for the last year and a half, has been named to the same position at the airline's Twin Cities base. Gulick has been succeeded at Fargo by W. L. Hollingsworth, station manager and superintendent of stations for the NWA Northern region at Edmonton, Alberta, since 1942.

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Houston's Planning Looks Ahead To 10 Years After War's End

Down in Texas, Houston is making a vigorous effort to work out a practical, comprehensive plan for providing adequate airport facilities for the new "Air Age," to become effective in the early postwar period.

The Aviation Committee of the Houston Chamber of Commerce has undertaken a comprehensive study of airport problems while Houston has already achieved a good start in the right direction by extending its municipal airport area from 700 to 1,240 acres. It is believed that with some relatively small acreage added this area will meet every requirement likely to develop at Houston in the first postwar decade. The existing airport has been developed with concrete runways from 4,500 to 4,750 feet long and 150 feet wide.

One angle of the city's problem at this juncture is to arrive at a conclusion as to essential extensions of the runway system. Advice and counsel has been requested from the engineering departments of present and probable airport users and a rather surprising divergence of opinion has been disclosed. At the moment no decision has been reached, although opinion appears to lean in the direction of 6,000-foot runways.

Houston's attractive administration building, barely four years old, has already outlived its practical usefulness. When the building was designed the lobby space provided did not provide for additional tenants. Already Houston is assured of one additional operating airline, with no provision for ticket office space. Houston is vigorously promoting direct single-line commercial air service to Latin American countries, for which two applications have been filed with CAB. A certificate to either applicant will necessitate substantially increased office space at the airport, plus accommodation for customs, public health and immigration officials. Then if any one of several feeder-line applications is conceded, further requirements for lobby space in the administration building will immediately develop; all of which point in the direction of a new passenger depot.

It is the impression in Houston that useful and adequate facilities can be developed at the present airport sufficient for ten years' usage for all types of aircraft equipped with radio. Lighter airplanes of the training and sport types will find ample accommodation at one or other of Houston's five privately owned landing fields.

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Atlanta Garage Plans 'Midtown Airport' As Early Postwar Project

With the arrival of peace, a 36-year-old Atlanta surface transportation outfit plans to go into the air. Belle Isle Enterprises has served Atlanta since 1908 with taxicabs, U-Drive-It passenger cars and trucks, and as a connecting link between Atlanta Airport and the city. To be added are helicopter taxi service, rental plane service, and shuttle service between Atlanta's major airports and a central landing deck projected as Midtown Airport.

Present center of the Belle Isle Enterprises is a 1,000-car, ramp-type garage. This structure, plus a store-building which is part of the same property, is to be carried up to a level of four stories, the owners say, and above this a landing deck of 60,000 square feet will be constructed. Below the landing deck it is planned to establish an entertainment center, including a restaurant, a night spot with outdoor roof-garden tables, as well as other facilities required by the "airport."

Belle Isle expects to make a blimp its first air vehicle, to serve busy periods of the major airports, and also offer sight-seeing trips over the city, including famed Stone Mountain. Twin-engine, four-place passenger planes will be available at a private airport to be established at the edge of the city, with direct service via helicopter from the landing deck. Passengers carrying flying licenses and wishing to pilot themselves may do so, as U-Drive-It passengers now do—or pilots will be supplied by the company.

As helicopters become available, these will be used for local taxi service, within the city and to nearby points not equipped with standards airfields. Eventually it is expected also that privately owned helicopters will make Midtown Airport their downtown landing point, and the company is planning to store these for the customer at the field already mentioned, a "parking" crew flying them to the storage point.

A. L. Belle Isle, president of the organization, began life as one of the early chauffeurs of private passenger cars. His employer made a trip to New York, where Belle Isle saw motor cars for hire. On his return he purchased a second-hand White Steamer, which he drove in his off-hours. As demand grew, he acquired other cars, and, quitting his job, set up in the motor-cars-for-hire-business, which grew into the present enterprise, which now includes Atlanta's Yellow Cab Co., plus the U-Drive-It passenger and truck rental service, and Belle Isle Garage.

Military Airports Must Be Kept in Use After War, New Englanders Hold

New England doesn't intend to see the millions spent on military airports all over its six states half wasted by abandonment of the fields after victory.

Spearheaded by Representative Edith Nourse Rogers (Mass.), New England Congressmen are demanding that the military fields be maintained and used as postwar civil airports insofar as possible.

Boston has already spent $7,000,000 on its East Boston airport and plans to spend $20,000,000 more to create in the next two years a field with 7,000-foot runways, Mrs. Rogers has pointed out, with an ultimate capacity of one landing and one takeoff per minute.

In addition, she declared, New England has many other airports of the future, now in military use at such points as Presque Isle, Bangor, Brunswick and Sanford, Maine; Manchester, Concord and Keene, N. H.; Lawrence, New Bedford, Westover Field, Westfield, Hyannis, Beverly and Norwood, Mass.; Providence, R. I., and Willimantic, Conn.

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